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CheetahAccess™ Wireless Gateway AC-IG2004W

User Guide

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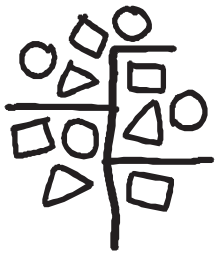
User Guide

CheetahAccess™ Wireless Gateway

10/100 Mbps Wireless Gateway

with 3 10/100 Mbps (RJ-45) Ethernet LAN ports,
and 1 10Mbps (RJ-45) WAN Port



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Chapter 1: Introduction

Congratulations on your purchase of the CheetahAccess™ Wireless Gateway. Accton is proud to provide you with a powerful yet simple communication device for connecting your local area network (wired or wireless LAN) to the Internet. For those who want to surf the Internet at the lowest possible cost, this wireless gateway provides a convenient and powerful solution.

About the CheetahAccess™ Wireless Gateway

The CheetahAccess Wireless Gateway provides Internet access to multiple users by sharing a single-user account. It serves as a wireless access point, and includes a dual-port WAN interface which allows you to connect to an xDSL or Cable modem, ISDN TA or PSTN analog modem. The CheetahAccess Wireless Gateway provides extensive firewall protection and Virtual Private Network (VPN) services. It also provides print services for any client attached to a LAN port.

The CheetahAccess Wireless Gateway supports dial-on-demand for ISDN/PSTN service, automatically connecting to the Internet when there are requests and terminating the connection if no further requests occur. This dual-port design also supports fail-over Internet access through the secondary WAN port (i.e., the serial port can be used for primary or backup Internet access).

This new CheetahAccess Wireless Gateway technology provides many cost-effective functions and management benefits. It is simple to configure and can be up and running in minutes.

Features and Benefits

- Internet connection to xDSL or Cable modem via a 10 Mbps WAN port
- Internet connection to ISDN TA or PSTN modem via an RS-232 console port
- Local network connection via 10/100 Mbps Ethernet ports or 11 Mbps wireless interface (supporting up to 128 mobile users)
- 802.11b Compliant – interoperable with multiple vendors
- Provides seamless roaming within 802.11b WLAN environment
- Supports 64-bit and 128-bit WEP (Wired Equivalent Privacy)
- Built-in Print Server for any client attached to the LAN
- DHCP for dynamic IP configuration, and DNS for domain name mapping
- Firewall with client privileges, hacker prevention, and NAT
- NAT also enables multi-user access with a single-user account, and virtual server functionality (providing protected access to Internet services such as Web, FTP, mail and Telnet)
- Virtual Private Network support using PPTP, L2TP or IPSec pass-through
- User-definable application sensing tunnel supports applications requiring multiple connections
- Supports CHAP authentication protocol for dial-up identification

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- Supports PPP dial-in connection using standard dial-up program
- Easy setup through a Web browser on any operating system that supports TCP/IP
- Compatible with all popular Internet applications

Applications

Many advanced applications are provided by the CheetahAccess Wireless Gateway, such as:

- **Flexible LAN Access**

  The CheetahAccess Wireless Gateway provides connectivity to 10/100 Mbps wired devices as well as 11 Mbps wireless mobile users. The wireless interface makes it easy to create a network in difficult-to-wire environments, or to provide quick access to databases for mobile workers.

- **Internet Access**

  This device supports Internet access through an xDSL, Cable, ISDN or PSTN connection. Since many DSL providers use PPPoE to establish communications with end users, the CheetahAccess Wireless Gateway includes a built-in client for this protocol, eliminating the need to install this service on your computer.

- **Shared IP Address**

  The CheetahAccess Wireless Gateway provides Internet access for up to 253 users with a shared IP address. Using only one ISP account, multiple users on your network can browse the Web at the same time.

- **Virtual Server**

  If you have a fixed IP address, you can set up the CheetahAccess Wireless Gateway to act as a virtual host for network address translation. Remote users access various services at your site using a constant IP address. Then, depending on the requested service (or port number), the CheetahAccess Wireless Gateway can route the request to the appropriate server (at another internal IP address). This secures your network from direct attack by hackers, and provides more flexible management by allowing you to change internal IP addresses without affecting outside access to your network.

- **User-Definable Application Sensing Tunnel**

  You can define special applications that require multiple connections such as Internet gaming, videoconferencing, and Internet telephony. The CheetahAccess Wireless Gateway can then sense the application type and open a multi-port tunnel for it.

- **DMZ Host Support**

  Allows a networked computer to be fully exposed to the Internet. This function is used when the special application sensing tunnel feature is insufficient to allow an application to function correctly.

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- **Security**

  The CheetahAccess Wireless Gateway supports security features that can deny Internet access to specified users, or filter all requests for specific services the administrator does not want to serve. The CheetahAccess Wireless Gateway's firewall can also block common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding.

- **Virtual Private Network**

  The CheetahAccess Wireless Gateway supports three of the most commonly used VPN protocols – PPTP, L2TP and IPSec. These protocols allow remote users to establish a secure connection to their corporate network. If your service provider supports VPNs, then any of these protocols can be used to create an authenticated and encrypted tunnel for passing secure data over the Internet (i.e., a traditionally shared data network). The VPN protocols supported by the CheetahAccess Wireless Gateway are briefly described below.

    - Point-to-Point Tunneling Protocol – Provides a secure tunnel for remote client access to a PPTP security gateway. PPTP includes provisions for call origination and flow control required by ISPs.
    - Layer Two Tunneling Protocol – Includes most of the features provided by PPTP, but has less overhead and is more suited for managed networks.
    - IP Security – Provides IP network-layer encryption. IPSec can support large encryption networks (such as the Internet) by using digital certificates for device authentication.

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Chapter 2: Installation

Before installing the CheetahAccess™ Wireless Gateway, verify that you have all the items listed under “Package Contents.” If any of the items are missing or damaged, contact your local Accton distributor. Also be sure that you have all the necessary cabling before installing the Wireless Gateway. After installing the Wireless Gateway, refer to the Web-based configuration program in Chapter 4 for information on configuring the router.

Package Contents

After unpacking the CheetahAccess Wireless Gateway, check the contents of the box to be sure you have received the following components:

- 4-port CheetahAccess Wireless Gateway
- Power adapter (5 V, 2.4 A)
- One CAT-5 Ethernet cable
- Four rubber feet
- Installation CD with complete user guide
- Quick Installation Guide
- Accton Warranty Registration Card

Immediately inform your dealer in the event of any incorrect, missing or damaged parts. If possible, please retain the carton and original packing materials in case there is a need to return the product.

Please fill out and return the Warranty Registration Card to Accton or register on Accton’s Web site at **register.acctontech.com.**. The CheetahAccess Wireless Gateway is covered by a limited lifetime warranty.

Description of Hardware

The CheetahAccess Wireless Gateway can be connected to the Internet or to a remote site using its RJ-45 WAN port or RS-232 serial port. It can be connected directly to your PC or to a local area network using any of the three Fast Ethernet LAN ports or through the wireless interface. It can also function as a print server.

Access speed to the Internet depends on your service type. Full-rate ADSL can provide up to 8 Mbps downstream and 640 Mbps upstream. G.lite (or splitterless) ADSL provides up to 1.5 Mbps downstream and 512 Kbps upstream. Cable modems can provide up to 36 Mbps downstream and 2 Mbps upstream. ISDN can provide up to 128 Kbps when using two bearer channels. And PSTN analog connections can now run up to 56 Kbps. However, you should note that the actual rate provided by specific service providers may vary dramatically from these upper limits.

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Although access speed to the Internet is determined by the modem type connected to your CheetahAccess Wireless Gateway, data passing between devices connected to your local area network can run up to 100 Mbps over the Fast Ethernet ports.

The CheetahAccess Wireless Gateway includes an LED display on the front panel for system power and port indications that simplifies installation and network troubleshooting. It also provides three RJ-45 LAN ports, one RJ-45 WAN port, one RS-232 serial port, one parallel printer port, as well as two antennas on the rear panel.

The following figure shows the components of the CheetahAccess Wireless Gateway:

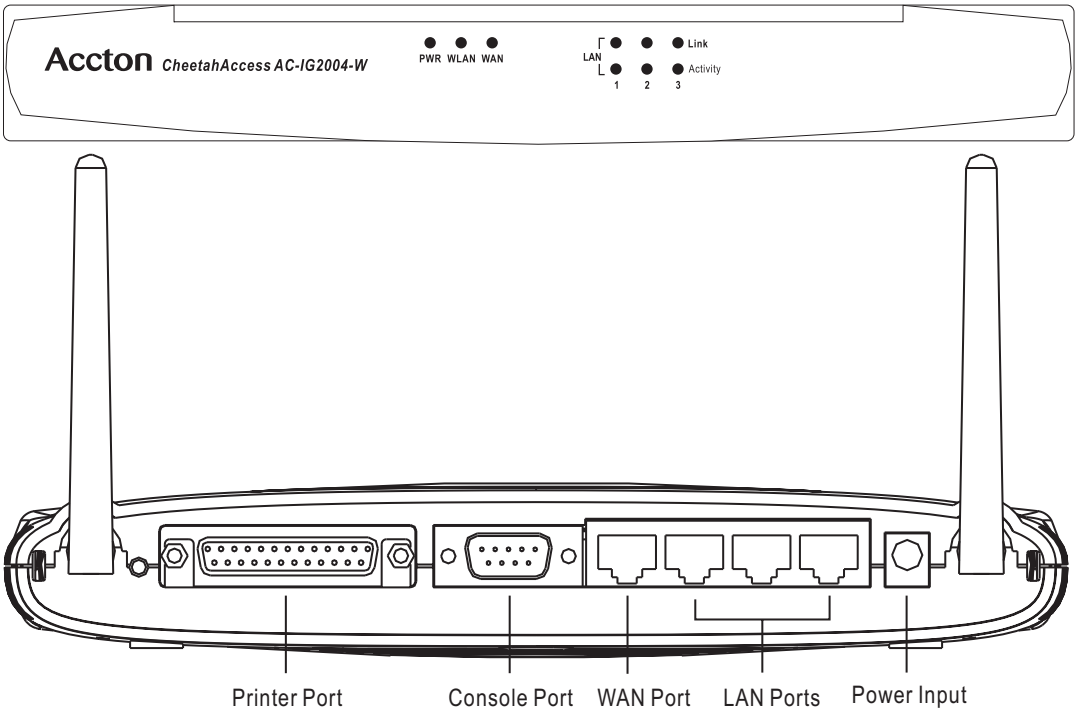

Figure 2-1. Front and Rear Panels

Item	Description
LEDs	Power, WLAN, WAN and LAN port status indicators. (See “Verify Port Status” on page 2-8.)
Wireless Antennas	Dual antennas provide optimal reception by dynamically choosing the best antenna for each client.
Reset Button	Use this button to reset the power and restore the default factory settings.
Printer Port	Parallel port (25-pins, D-type, female). Connect the shared printer to this port.
COM Port	Serial port (9-pins, D-type, male). Connect your ISDN TA or 56K analog modem to this port.

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Item	Description
WAN Port	WAN port (RJ-45). Connect your Cable modem, xDSL modem, or an Ethernet router to this port.
LAN Ports	Fast Ethernet ports (RJ-45). Connect devices (such as a PC, hub or switch) on your local area network to these ports.
Power Inlet	Connect the included power adapter to this inlet. **Warning**: The included power adapter is 5 V / 2 A DC. Using the wrong type of power adapter may cause damage.

- Three RJ-45 ports for connection to a 10BASE-T/100BASE-TX Ethernet Local Area Network (LAN). These ports can auto- negotiate the operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X (i.e., allowing these ports to be connected to any network device with straight-through cable). These ports can be connected directly to a PC or to a server equipped with an Ethernet network interface card, or to a networking device such as an Ethernet hub or switch.
- One RJ-45 port for connection to an xDSL or Cable modem. This port is fixed at 10 Mbps, full duplex. Use a Category 5 cable to connect this WAN port to a xDSL or Cable modem.
- One RS-232 serial port to connect to an ISDN Terminal Adapter (TA) or to a PSTN analog modem.
- One parallel printer port that can be connected to a printer. This printer can then be shared by any LAN/WLAN users.
- Two antennas (dipole, omni-directional).

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System Requirements

You must have an Internet Service Provider (ISP) that meets the following minimum requirements:

- Internet access from your local telephone company or ISP using an xDSL modem, Cable modem, ISDN TA, or PSTN analog modem. You may also have access over the telephone system to an analog modem at another site.
- A PC using a fixed IP address or dynamic IP address assignment via DHCP, as well as a Gateway server address and DNS server address from your service provider.
- For wired LAN connection, you need a computer equipped with a 10 Mbps, 100 Mbps, or 10/100 Mbps Fast Ethernet card, or a USB-to-Ethernet converter. For wireless LAN connections, each computer must have an 11 Mbps wireless adapter.
- TCP/IP network protocol installed on each PC that needs to access the Internet.
- A Java-enabled Web browser, such as Microsoft Internet Explorer 5.0 or above or Netscape Communicator 4.0 or above installed on one PC at your site for configuring the CheetahAccess Wireless Gateway.

Connect the System

The CheetahAccess Wireless Gateway can be positioned at any convenient location in your office or home. No special wiring or cooling requirements are needed. You should, however comply with the following guidelines:

- Keep the CheetahAccess Wireless Gateway away from any heating devices.
- Do not place the CheetahAccess Wireless Gateway in a dusty or wet environment.

You should also remember to turn off the power, remove the power cord from the outlet, and keep your hands dry when you install the CheetahAccess Wireless Gateway.

Basic Installation Procedure

1. **Connect the LAN**: You can connect the CheetahAccess Wireless Gateway to your PC, or to a hub or switch. Run Ethernet cable from one of the LAN ports on the rear of the CheetahAccess Wireless Gateway to your computer's network adapter or to another network device.

   You can also connect the CheetahAccess Wireless Gateway to your PC (using a wireless client adapter) via radio signals. Position both antennas on the back of the CheetahAccess Wireless Gateway into the desired positions. For more effective coverage, you may want to position one antenna along the vertical axis and the other antenna along the horizontal axis. **(The antennas emit signals along the toroidal plane – and thus provide more effective coverage when positioned along alternate axes.)**

2. **Connect the WAN**: Prepare an Ethernet cable for connecting the CheetahAccess Wireless Gateway to a Cable/xDSL modem or Ethernet router.

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Prepare a serial cable for connecting the CheetahAccess Wireless Gateway to an ISDN TA or PSTN modem.

3. **Connect your printer**: Use standard parallel printer cable to connect your printer to the printer port on the CheetahAccess Wireless Gateway.

4. **Power on**: Connect the power adapter to the CheetahAccess Wireless Gateway.

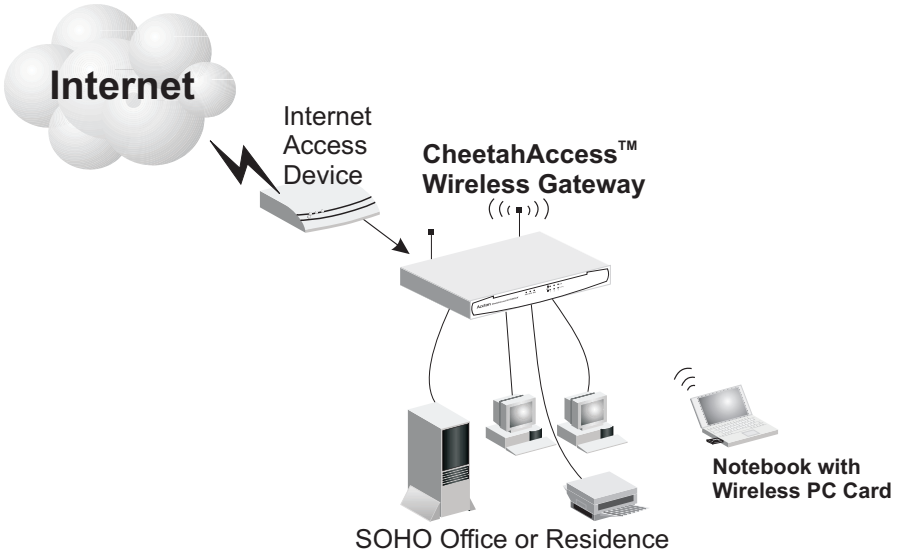

Figure 2-2. Connecting the CheetahAccess™ Wireless Gateway

Attach to Your Network Using Ethernet Cabling

The three LAN ports on the CheetahAccess Wireless Gateway can auto-negotiate the connection speed to 10 Mbps Ethernet or 100 Mbps Fast Ethernet, as well as the transmission mode to half-duplex or full-duplex. These LAN ports also support auto-configuration for pin signals (auto-MDI/MDI-X) that allows you to use straight-through cable for connecting the CheetahAccess Wireless Gateway to any network device. (See Appendix B for details on wiring.)

Use twisted-pair cable to connect any of the three LAN ports on the CheetahAccess Wireless Gateway to an Ethernet adapter on your PC. Otherwise, you can cascade any of LAN ports on the CheetahAccess Wireless Gateway to an Ethernet hub or switch, and then connect your PC or other network equipment to the hub or switch. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

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Warning: Do not plug a phone jack connector into any RJ-45 port. This may damage the CheetahAccess Wireless Gateway. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

Notes: **1.** Use 100-ohm shielded or unshielded twisted-pair cable with RJ-45 connectors for all connections. Use Category 3, 4 or 5 for connections that operate at 10 Mbps, and Category 5 for connections that operate at 100 Mbps.

2. Make sure each twisted-pair cable does not exceed 100 meters (328 feet).

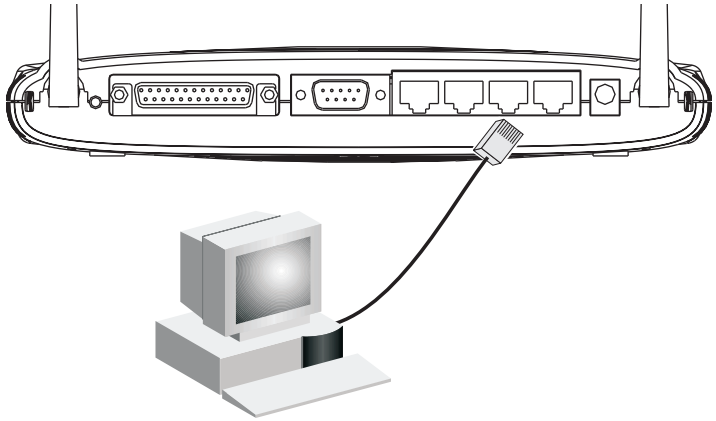

Figure 2-3. Making LAN Connections

Attach to Your Network Using Radio Signals

Install a wireless network adapter in each computer that will be connected to the Internet or your local network via radio signals. Accton currently offers several wireless network cards, including the WN3201 Wireless PCI card and the WN3301 Wireless PC card.

Rotate both antennas on the back of the CheetahAccess Wireless Gateway to the desired position. For more effective coverage, position one antenna along the vertical axis and the other along the horizontal axis. Try to place the CheetahAccess Wireless Gateway in a position that is located in the center of your wireless network. Normally, the higher you place the antenna, the better the performance. Ensure that the CheetahAccess Wireless Gateway's location provides optimal reception throughout your home or office.

Computers equipped with a wireless adapter can communicate with each other as an independent wireless LAN by configuring each computer to the same radio channel. However, the CheetahAccess Wireless Gateway can provide access to your wired/wireless LAN or to the Internet for all wireless workstations. Each wireless PC in this network infrastructure can talk to any computer in the wireless group via a radio link, or access other computers or network resources in the wired LAN infrastructure or over the Internet via the CheetahAccess Wireless Gateway.

The wireless infrastructure configuration not only extends the accessibility of wireless PCs to the wired LAN, but also doubles the effective wireless transmission range for wireless PCs by retransmitting incoming radio signals through the

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CheetahAccess Wireless Gateway.

A wireless infrastructure can be used for access to a central database, or for connection between mobile workers, as shown in the following figure:

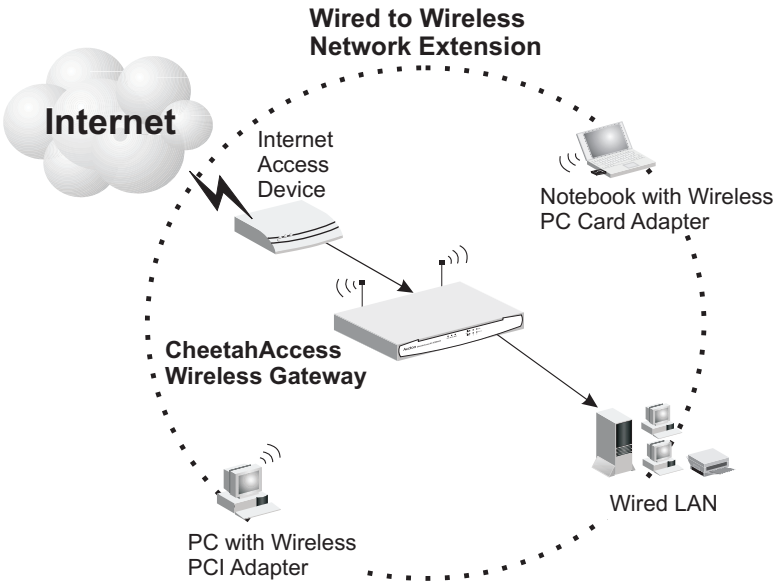

Figure 2-4. Making WLAN Connections

Attach the CheetahAccess™ Wireless Gateway to the Internet

If Internet services are provided through an xDSL or Cable modem, use unshielded or shielded twisted-pair Ethernet cable (Category 3 or greater) with RJ-45 plugs to connect the broadband modem directly to the WAN port on the CheetahAccess Wireless Gateway. Use either straight-through or crossover cable depending on the port type provided by the modem (see Appendix B). For ISDN or PSTN service, attach the access device to the RS-232 serial port on the CheetahAccess Wireless Gateway.

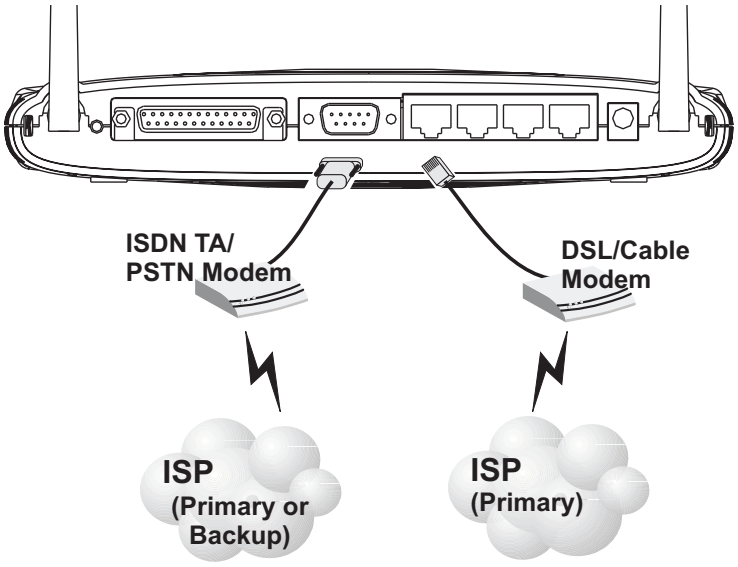

Figure 2-5. Making WAN Connections

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Note: When connecting to the WAN port, use 100-ohm Category 3, 4 or 5 shielded or unshielded twisted-pair cable with RJ-45 connectors at both ends for all connections.

Connect the CheetahAccess™ Wireless Gateway to a Printer

If you connect a printer to the CheetahAccess Wireless Gateway, all the computer users connected to your LAN can have access to the printer. Connect a standard parallel printer cable to the Printer port on the CheetahAccess Wireless Gateway, and configure the printer server as described on page 6-1.

Connecting the Power Adapter

Plug the power adapter into the power socket on the CheetahAccess Wireless Gateway, and the other end into a power outlet. Check the indicator marked Power on the front panel to be sure it is on. If the power indicator does not light up, refer to Troubleshooting in Appendix A.

Verify Port Status

Check the power and port indicators as shown in the following table.

LED	Condition	Status
Power (Green)	On	CheetahAccess Wireless Gateway is receiving power.
WLAN (Green)	On	The CheetahAccess Wireless Gateway has established a valid wireless connection.
WAN (Green)	On	The WAN port has established a valid network connection.
LAN		
Link (Green)	On	The indicated LAN port has established a valid network connection.
Activity (Amber)	Flashing	The indicated LAN port is transmitting or receiving traffic.

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Chapter 3: Configuring Client PCs

TCP/IP Configuration

To access the Internet through the CheetahAccess™ Wireless Gateway, you must configure the network settings of the computers on your LAN to use the same IP subnet as the CheetahAccess Wireless Gateway. The default network settings for the CheetahAccess Wireless Gateway are:

IP Address: 192.168.2.1
Subnet Mask: 255.255.255.0

Note: These settings can be changed to fit your network requirements, but you must first configure at least one computer as described in Chapter 5 to access the CheetahAccess Wireless Gateway's Web configuration interface. (See Chapter 4 for information on configuring the CheetahAccess Wireless Gateway.)

If you have not previously configured TCP/IP for your computer, refer to "Installing TCP/IP Protocol in Your PC" on page 5-1.

All PCs connected to the CheetahAccess Wireless Gateway must be set to the same IP subnet as the CheetahAccess Wireless Gateway. The default IP address pool of the CheetahAccess Wireless Gateway is 192.168.2.X (where X means 2–254) and the subnet mask is 255.255.255.0. You can set the IP address for client PCs either by automatically obtaining an IP address from the CheetahAccess Wireless Gateway's DHCP service or by manual configuration. See "Setting TCP/IP to Work with the CheetahAccess™ Wireless Gateway" on page 5-2.

Printer Client Installation

If you need to provide print services for devices attached to the CheetahAccess Wireless Gateway, then install the Port Monitor program from the CD (for Windows 95/98/NT), and configure the print server on each network station. The CheetahAccess Wireless Gateway print server supports Windows 95/98/ME/NT/ 2000 and Unix platforms. Refer to Chapter 6: "Configuring Printer Services."

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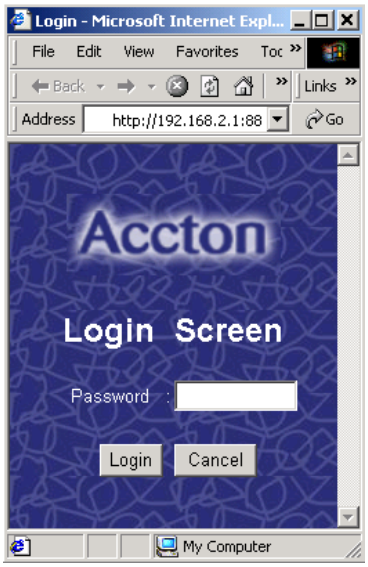
Chapter 4: Configuring the CheetahAccess™ Wireless Gateway

After you have configured TCP/IP on a client computer, you can use a Web browser to configure the CheetahAccess™ Wireless Gateway. The CheetahAccess Wireless Gateway can be configured by any Java-supported browser including Internet Explorer 4.0 or above, or Netscape Navigator 4.0 or above. Using the Web management interface, you can configure the CheetahAccess Wireless Gateway and view statistics to monitor network activity.

To access the CheetahAccess Wireless Gateway's management interface, enter the IP address of the CheetahAccess Wireless Gateway in your Web browser's "Address" field (http://192.168.2.1). The CheetahAccess Wireless Gateway login screen will appear. Leave the Password field blank and click on "login." (There is no password by default.) The home page displays the Main Menu on the left-hand side of the screen and descriptive information on the right-hand side. The Main Menu links are used to navigate to other menus that display configuration parameters and statistics.



Navigating the Web Browser Interface

The CheetahAccess Wireless Gateway's management interface includes four key menus – Status, Help, Tools, and Setup. The Status and Help menus provide general information on the current settings and how to configure the CheetahAccess Wireless Gateway. The Setup menu is used to configure the LAN, WAN and wireless interface, as well as other advanced functions. The Tools menu is used to reset the CheetahAccess Wireless Gateway, restore the factory settings, or upgrade firmware.

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Setting a Password

If this is your first time to access the CheetahAccess Wireless Gateway, you should define a new Administrator password, record it and put it in a safe place. From the Main Menu, select “Setup,” then “Change Password” and follow the instructions on the screen (see page 4-4). Note that passwords can consist of 3 to 12 alphanumeric characters and are case-sensitive.

Making Configuration Changes

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, be sure to click the “Enter” button at the bottom of the page to confirm the new setting.

Note: To ensure proper screen refresh after a command entry, be sure that Internet Explorer 5.0 is configured as follows: Under the menu “Tools / Internet Options / General / Temporary Internet Files / Settings,” the setting for “Check for newer versions of stored pages” should be “Every visit to the page.”

Main Menu

Using the Web management interface, you can define system parameters, manage and control the CheetahAccess Wireless Gateway and its ports, or monitor network conditions. The following table briefly describes the selections available from this program.

Menu	Description
Setup Menu	Configures TCP/IP settings and client services.
Change Password	Sets the password for administrator access.
Set Time Zone	Sets the local time zone.
LAN	Sets the TCP/IP configuration for the CheetahAccess Wireless Gateway LAN interface and all DHCP clients.
WAN	Specifies the Internet connection type: (1) DHCP host configuration, (2) fixed IP and gateway address, (3) PPPoE configuration, or (4) dial-up modem.
DNS	Specifies DNS servers to use for domain name resolution.
Wireless	Configures the radio frequency, domain, and encryption for wireless communications.
Advanced Settings	Configures a variety of packet filtering and specialized functions, including: • Firewall • Virtual Server • Special Application • Client Filtering • MAC Filtering • Misc

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Menu	Description
Status Menu	Displays connection status, key interface settings, as well as the firmware and hardware version numbers.
INTERNET	Displays WAN connection type and status.
GATEWAY	Displays system IP settings, the status for DHCP, and Firewall services, as well as the wireless interface settings.
INFORMATION	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, as well as the hardware version and serial number.
Security Log	Displays any illegal attempts to access your network.
DHCP Client Log	Displays information on all DHCP clients attached to your network.
Tools Menu	Contains options to reset the system, restore configuration settings, or update system firmware.
Reset CheetahAccess Wireless Gateway	Reboots the system and retains all of your configuration settings.
Restore Factory Defaults	Restores all configuration settings to the factory defaults
Update Firmware	Upgrades the system with the latest firmware obtained from SMC's website at www.smc.com
Help Menu	Contains information for product support, troubleshooting, and network terminology.

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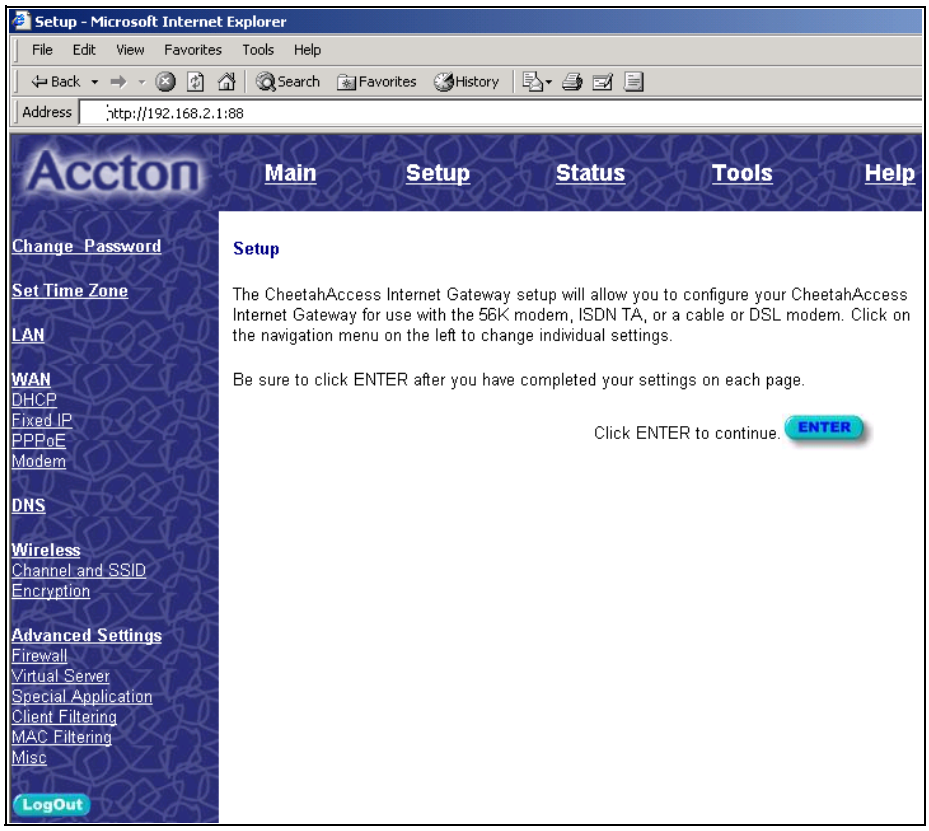
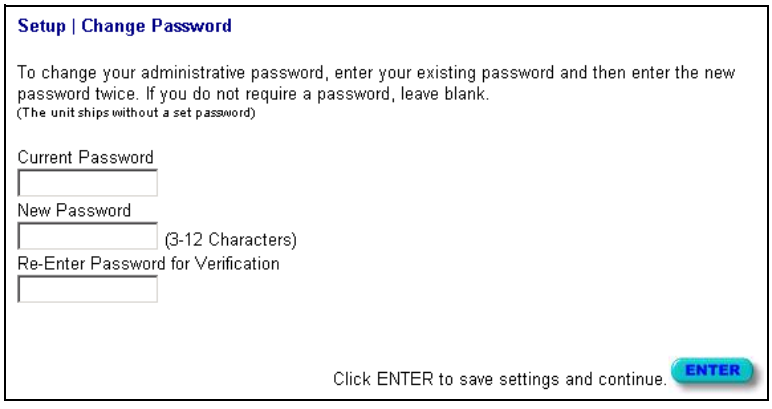
Networking and Client Services

Use the Setup menu to configure the LAN interface (including TCP/IP parameters for the CheetahAccess Wireless Gateway's gateway address and DHCP address pool for dynamic client address allocation), the WAN connection options, DNS domain name mapping, the wireless interface, and other advanced services.



You can use the Setup Wizard by clicking the "Enter" button at the bottom of the page and changing the required settings, or you can select the specific items you need to change from the Setup menu on the left side of the screen.

Change Password


Setup | Change Password
To change your administrative password, enter your existing password and then enter the new password twice. If you do not require a password, leave blank.
(The unit ships without a set password)
Current Password
New Password
(3-12 Characters)
Re-Enter Password for Verification
Click ENTER to save settings and continue.
ENTER

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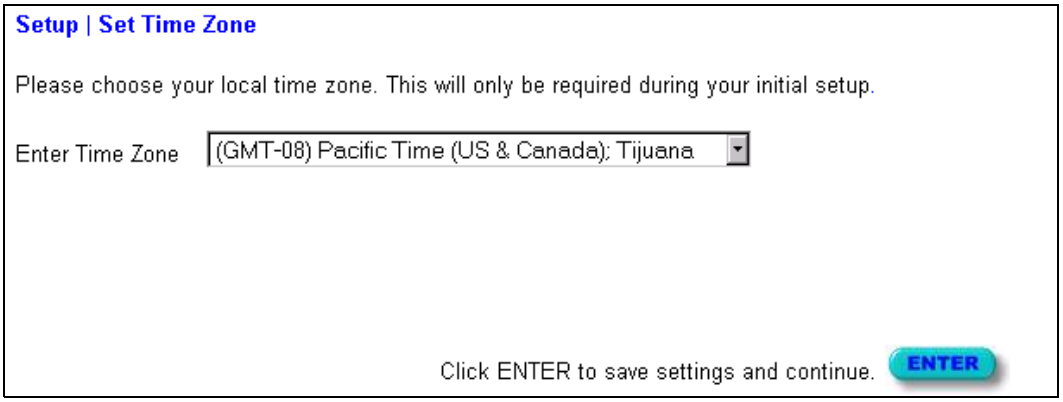
Use this menu to restrict management access based on a specific password. You must enter a password to access the configuration options provided by the menus. By default, there is no password. So, please assign a password to the Administrator as soon as possible, and store it in a safe place.

Passwords can contain from 3–12 alphanumeric characters, and are case-sensitive.

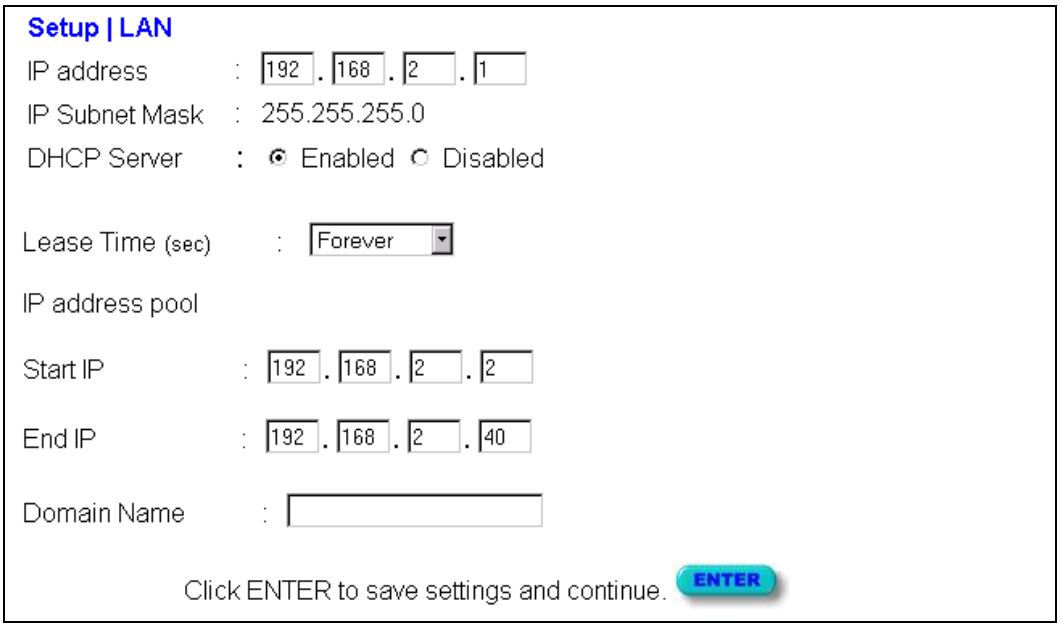
Note: If your password is lost, or you cannot gain access to the management interface, press the Reset button on the front panel (holding it down for at least five seconds) to restore the factory defaults.

Set Time Zone


Setup | Set Time Zone
Please choose your local time zone. This will only be required during your initial setup.
Enter Time Zone
(GMT-08) Pacific Time (US & Canada); Tijuana
Click ENTER to save settings and continue.
ENTER

Set the time zone for the CheetahAccess Wireless Gateway. This information is used for log entries and client filtering.

LAN Gateway and DHCP Settings


Setup | LAN
IP address : 192 . 168 . 2 . 1
IP Subnet Mask : 255.255.255.0
DHCP Server : Enabled Disabled
Lease Time (sec) : Forever
IP address pool
Start IP : 192 . 168 . 2 . 2
End IP : 192 . 168 . 2 . 40
Domain Name :
Click ENTER to save settings and continue.
ENTER

Configure the gateway address of the CheetahAccess Wireless Gateway. To dynamically assign the IP address for client PCs, enable the DHCP Server, set the lease time, and then specify the address range. Also remember to configure all of your client PCs for dynamic address allocation.

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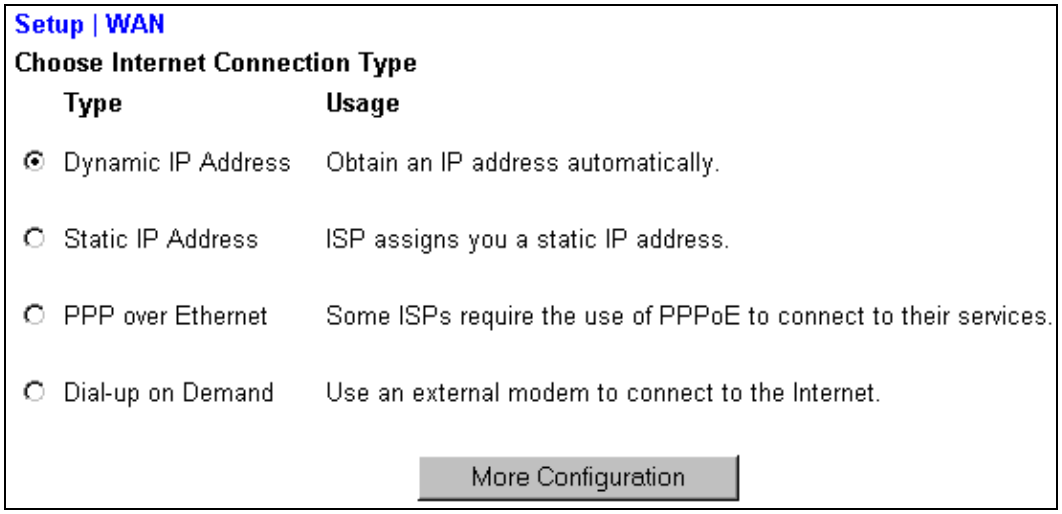
Valid IP addresses consist of four numbers separated by periods. The first three fields are the network portion, and can be from 0–255, while the last field is the host portion and can be from 1–254. However, remember not to include the gateway address of the CheetahAccess Wireless Gateway in the client address pool.

The Domain Name is optional, but this information may be specified so that it can be passed to the client PCs.

WAN Configuration

Specify the WAN connection type required by your Internet Service Provider, then click “More Configuration” to provide detailed configuration parameters for the selected connection type.


Setup | WAN
Choose Internet Connection Type
Type
Usage
Dynamic IP Address
Obtain an IP address automatically.
Static IP Address
ISP assigns you a static IP address.
PPP over Ethernet
Some ISPs require the use of PPPoE to connect to their services.
Dial-up on Demand
Use an external modem to connect to the Internet.
More Configuration

Specify one of the first three options to configure a WAN connection through the RJ-45 port (i.e., a connection to an xDSL modem or Cable modem). Specify the “Dial-up on Demand” option to configure a WAN connection through the serial port (i.e., a connection to an ISDN TA or PSTN modem).

Note: If WAN connections are configured for both the RJ-45 and serial port, the serial port will be used as a backup Internet connection if the primary RJ-45 WAN connection fails.

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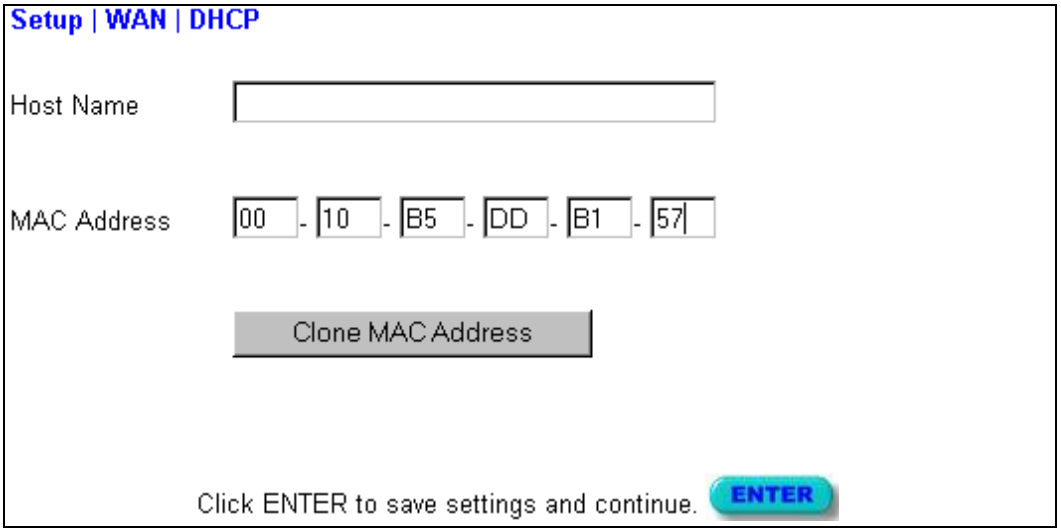
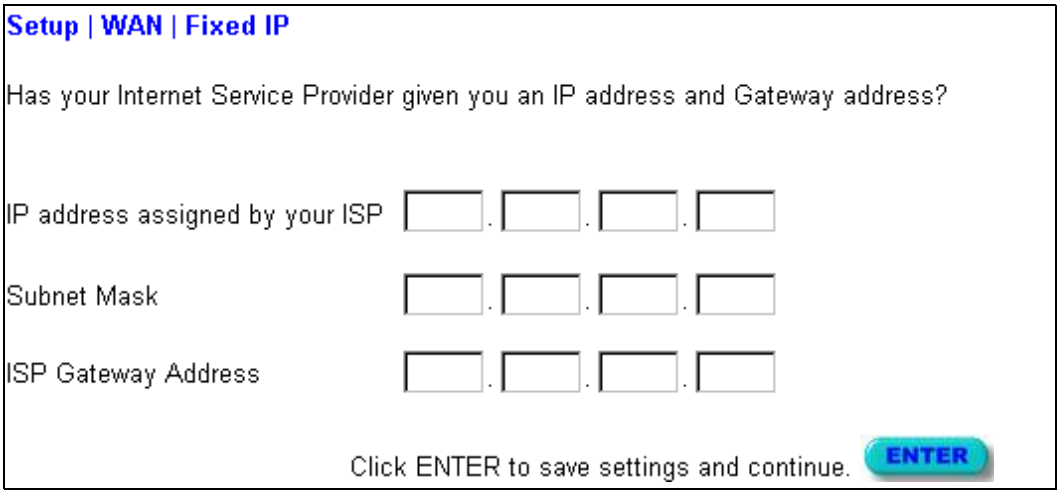
Dynamic IP Address – DHCP



The Host Name is optional, but may be required by some ISPs. The default MAC address is set to the WAN's physical interface on the CheetahAccess Wireless Gateway. Use this address when registering for Internet service, and do not change it unless required by your ISP. You can use the "Clone MAC Address" button to copy the MAC address of the Ethernet Card installed by your ISP (in your PC) and replace the WAN MAC address with this MAC address.

Static IP Address – Fixed IP


Setup | WAN | Fixed IP
Has your Internet Service Provider given you an IP address and Gateway address?
IP address assigned by your ISP
Subnet Mask
ISP Gateway Address
Click ENTER to save settings and continue.
ENTER

If your Internet Service Provider has assigned a fixed address, enter the assigned address and subnet mask for the CheetahAccess Wireless Gateway, then enter the gateway address of your ISP.

Note: You may need a fixed address if you want to provide Internet services, such as a Web server or FTP server.

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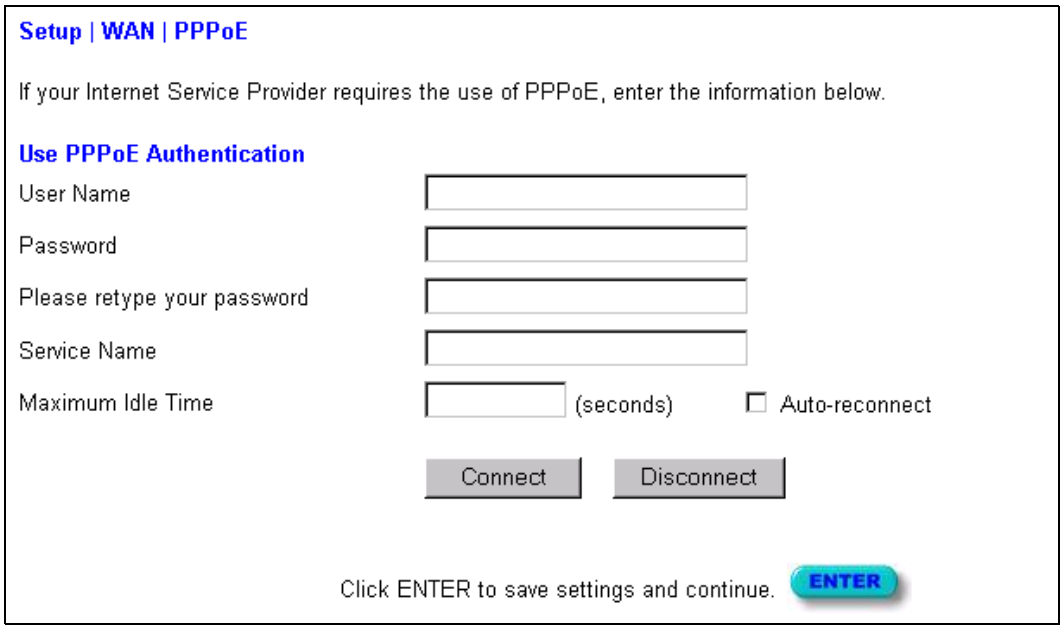
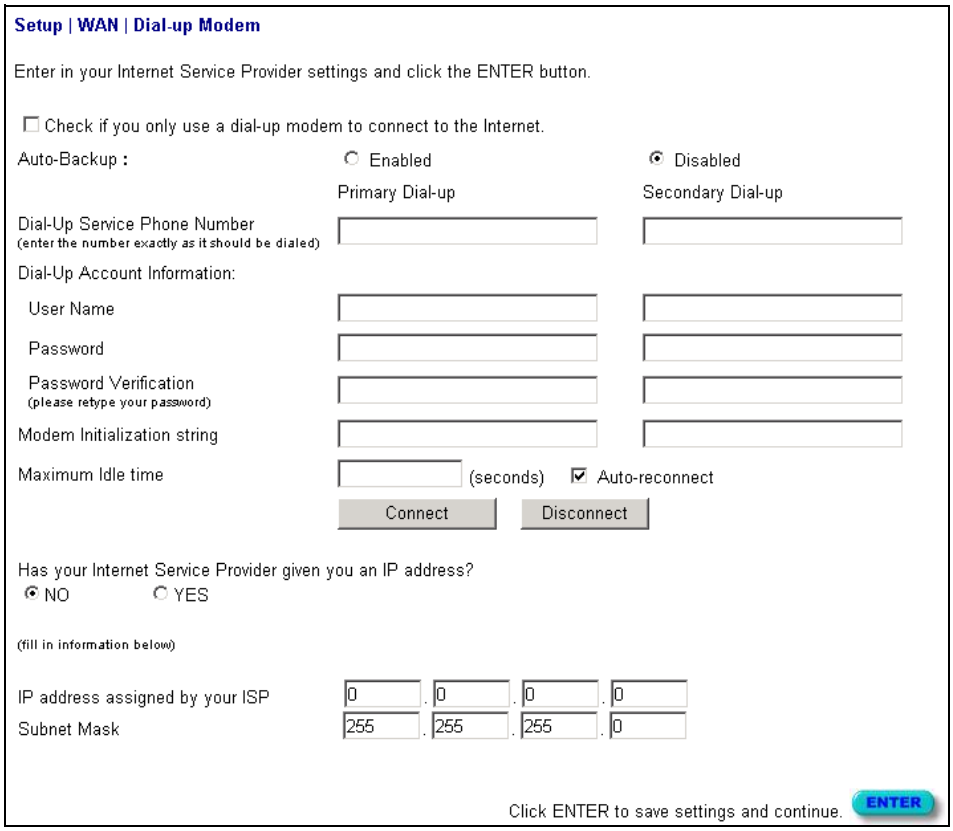
PPP over Ethernet – PPPoE



Enter the PPPoE user name and password assigned by your ISP. The Service Name is normally optional, but may be required by some providers.

Dial-up on Demand – Modem



If you are accessing the Internet via an ISDN TA or PSTN modem attached to the serial port on the CheetahAccess Wireless Gateway, then you must specify your account information on this screen as described below.

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Check if you only use a dial-up modem to connect to the Internet. – If the serial port is used for primary Internet access, then mark this item.

- Auto Backup – Click on “Enabled” for automatically dialing up when the primary WAN link fails.

Note: If not marked, then this connection will only be used for backup access if the primary WAN link fails.

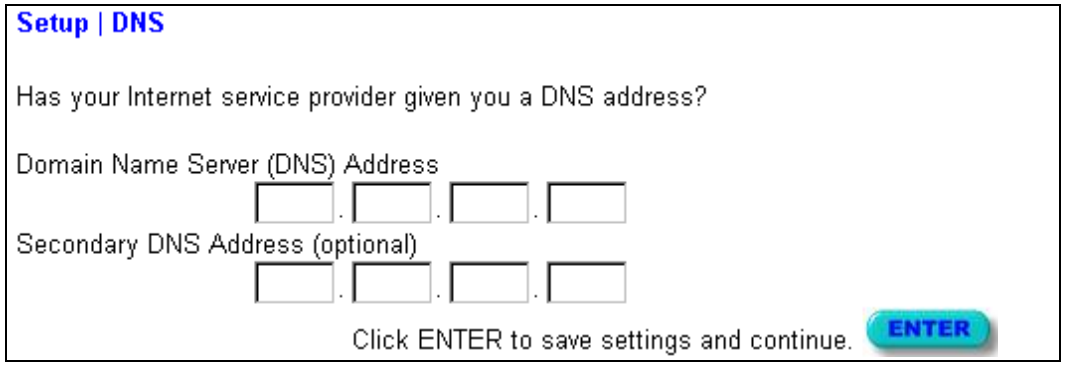
Dial-Up Service Phone Number – Enter the phone number your service provider has given to you for Internet access.

Dial-Up Account Information – Enter your ISP account user name and password.

Has your Internet Service Provider given you an IP address? – If you are assigned a dynamic IP address every time you dial up, mark “No” for this item. However, if your ISP has assigned a fixed IP address for you to use, mark “Yes” for this item and enter the IP address and subnet mask.

Note: If your ISP has given you a secondary phone number, or if you have a secondary Internet service account, then fill in the relevant fields under “Secondary Dial-up.”

DNS Configuration


Setup | DNS
Has your Internet service provider given you a DNS address?
Domain Name Server (DNS) Address
Secondary DNS Address (optional)
Click ENTER to save settings and continue.
ENTER

Domain Name Servers are used to map an IP address to the equivalent domain name (e.g., www.accton.com). Your ISP should provide the IP address for one or more domain name servers. Enter those addresses on this screen.

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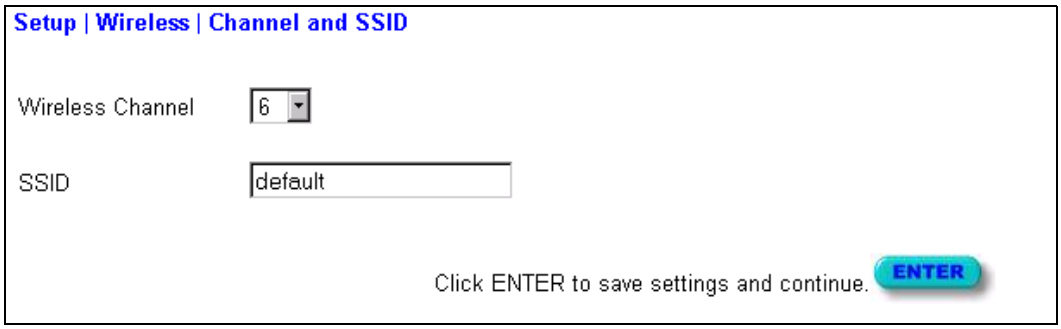
Wireless Configuration

To configure the CheetahAccess Wireless Gateway as a wireless access point for wireless clients (either stationary or roaming), all you need to do is define the radio channel, the domain identifier, and encryption options.

You can use the Setup Wizard by clicking the “Enter” button at the bottom of the page and changing the required settings, or you can select “Channel and SSID” or “Encryption” from the Setup menu on the left side of the screen.

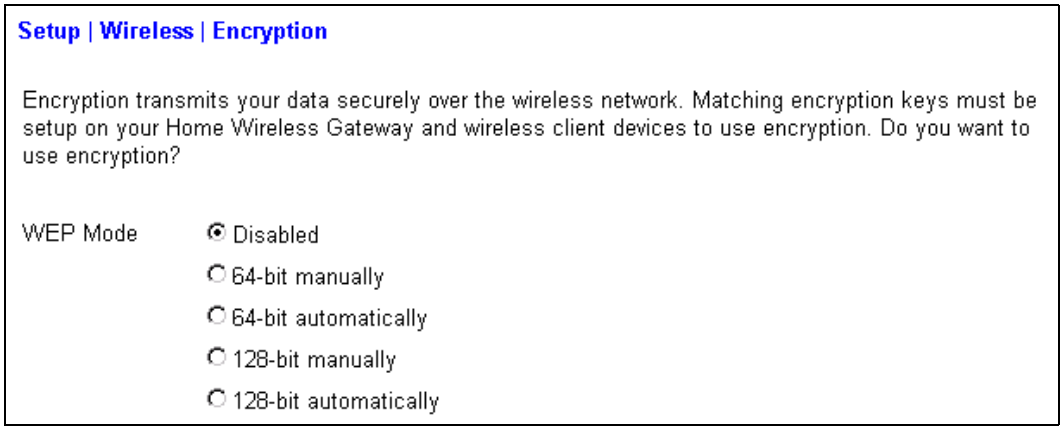
Setup | Wireless
The following screens allow you to setup your home wireless network. These settings must be identical to your wireless client devices.
Click ENTER to continue.
ENTER

Channel and SSID



You must specify a common radio channel and service domain (i.e., Service Set ID) to be used by the CheetahAccess Wireless Gateway and all of your wireless clients. Be sure you configure all of your clients to the same values.

Encryption


Setup | Wireless | Encryption
Encryption transmits your data securely over the wireless network. Matching encryption keys must be setup on your Home Wireless Gateway and wireless client devices to use encryption. Do you want to use encryption?
WEP Mode
Disabled
64-bit manually
64-bit automatically
128-bit manually
128-bit automatically

If you are transmitting sensitive data across wireless channels, you should enable encryption. Encryption requires you to use the same set of encryption/decryption keys for the CheetahAccess Wireless Gateway and all of your wireless clients. You can choose between standard 64-bit or the more robust 128-bit encryption keys.

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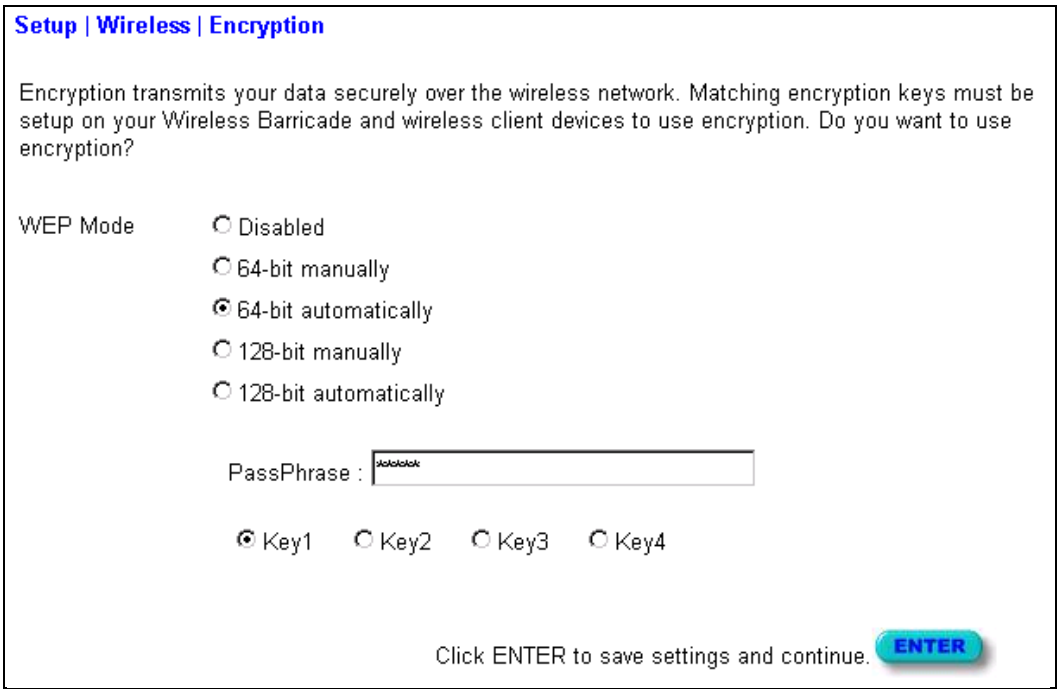
However, please be aware that the extra processing time required for encryption may affect the throughput for wireless communications.

You can automatically generate encryption keys or you can manually enter the keys. For automatic 64-bit security, you enter a passphrase that is used to create four keys (as shown below). The automatic 128-bit security generates a single key by entering a passphrase. To manually configure the keys, enter five hexadecimal pairs for each 64-bit key, or enter 13 pairs for the single 128-bit key. (A hexadecimal digit is a number or letter in the range 0-9 or A-F.)


Setup | Wireless | Encryption
Encryption transmits your data securely over the wireless network. Matching encryption keys must be setup on your Wireless Barricade and wireless client devices to use encryption. Do you want to use encryption?
WEP Mode
Disabled
64-bit manually
64-bit automatically
128-bit manually
128-bit automatically
PassPhrase :
Key1
Key2
Key3
Key4
Click ENTER to save settings and continue.
ENTER

If you use encryption, then configure the same keys used for the CheetahAccess Wireless Gateway on each of your wireless clients. Note that the Wired Equivalent Privacy (WEP) protects data transmitted between wireless nodes, but does not protect any transmissions over your wired network or over the Internet.

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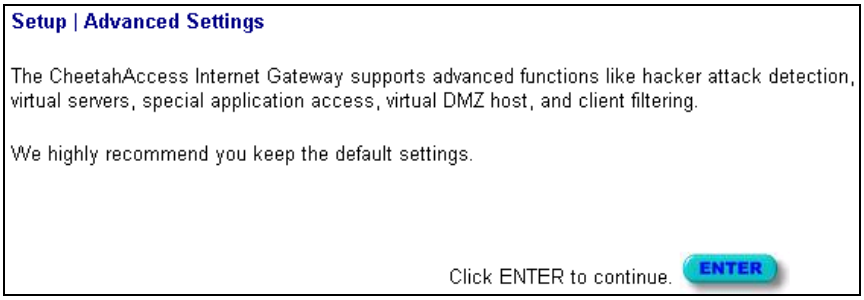
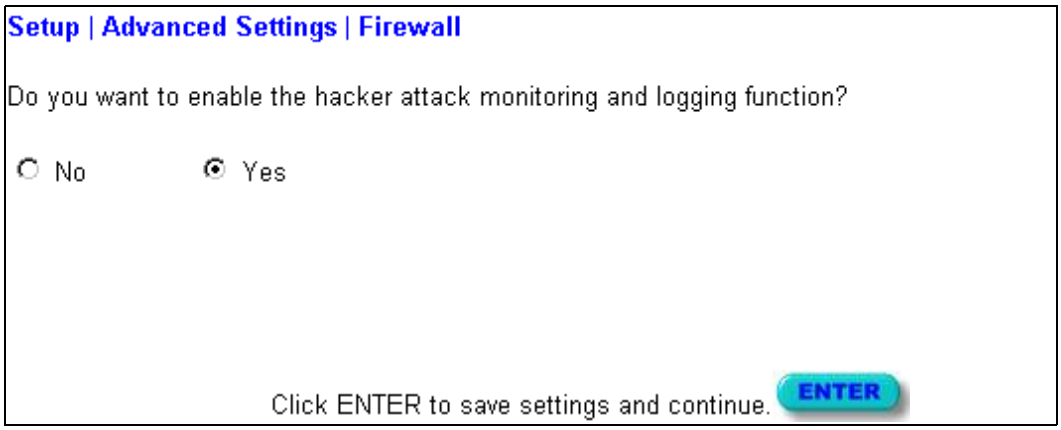
Configuring Client Services

The CheetahAccess Wireless Gateway includes a broad range of client services, including firewall protection, network address translation, virtual server, connection support for special applications, and restricted Internet access for specified clients. You can configure these functions using the Setup Wizard by clicking “Enter” at the bottom of the Advanced Settings screen, or by selecting specific items from the menu on the left of the screen.


Setup | Advanced Settings
The CheetahAccess Internet Gateway supports advanced functions like hacker attack detection, virtual servers, special application access, virtual DMZ host, and client filtering.
We highly recommend you keep the default settings.
Click ENTER to continue.
ENTER

Firewall Protection

The CheetahAccess Wireless Gateway’s firewall can block common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding. The firewall does not significantly affect system performance, so we advise leaving it enabled to protect your network users.


Setup | Advanced Settings | Firewall
Do you want to enable the hacker attack monitoring and logging function?
No
Yes
Click ENTER to save settings and continue.
ENTER

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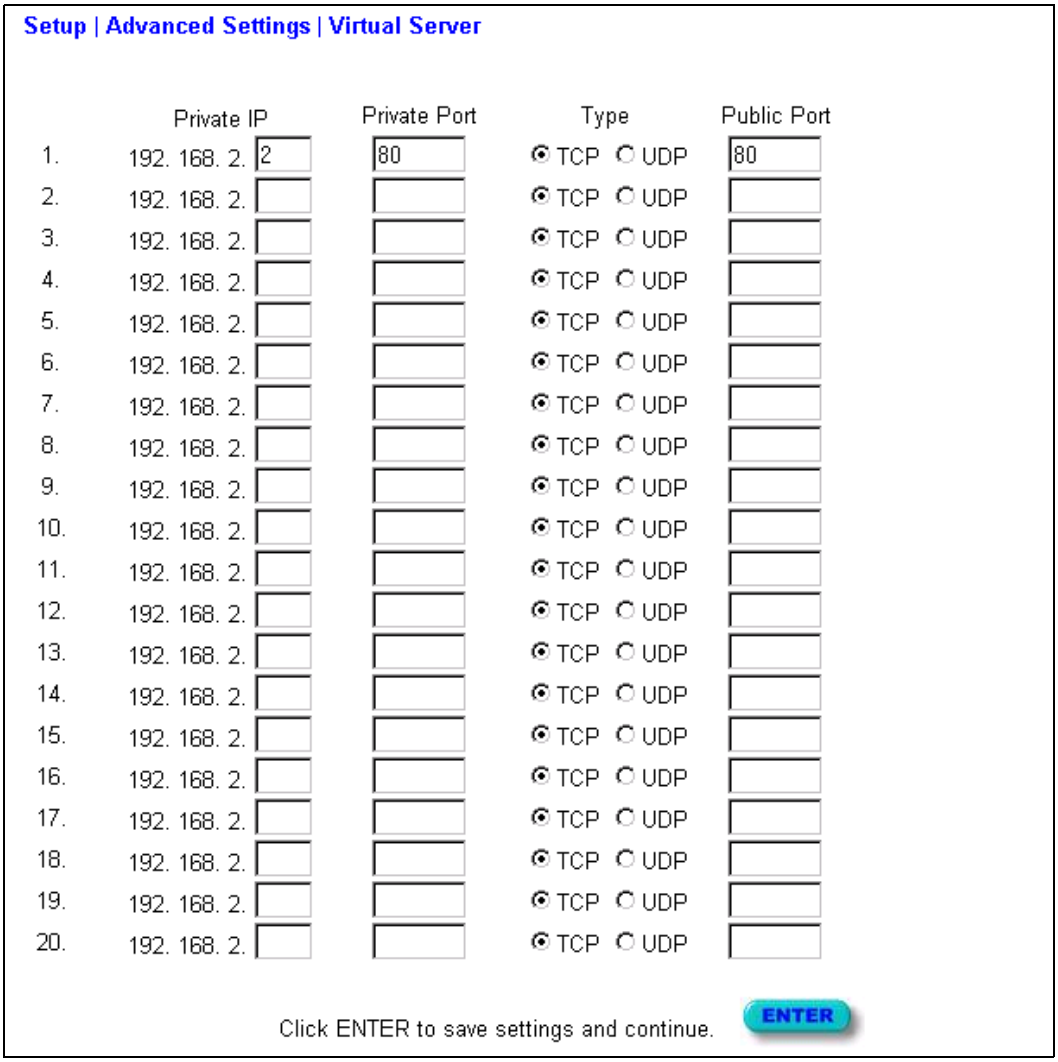
Virtual Server

If you configure the CheetahAccess Wireless Gateway as a virtual server, remote users accessing services such as Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the CheetahAccess Wireless Gateway redirects the external service request to the appropriate server (located at another internal IP address).


Setup | Advanced Settings | Virtual Server
Private IP
Private Port
Type
Public Port
1. 192. 168. 2. 2 80 TCP UDP 80
2. 192. 168. 2. TCP UDP
3. 192. 168. 2. TCP UDP
4. 192. 168. 2. TCP UDP
5. 192. 168. 2. TCP UDP
6. 192. 168. 2. TCP UDP
7. 192. 168. 2. TCP UDP
8. 192. 168. 2. TCP UDP
9. 192. 168. 2. TCP UDP
10. 192. 168. 2. TCP UDP
11. 192. 168. 2. TCP UDP
12. 192. 168. 2. TCP UDP
13. 192. 168. 2. TCP UDP
14. 192. 168. 2. TCP UDP
15. 192. 168. 2. TCP UDP
16. 192. 168. 2. TCP UDP
17. 192. 168. 2. TCP UDP
18. 192. 168. 2. TCP UDP
19. 192. 168. 2. TCP UDP
20. 192. 168. 2. TCP UDP
Click ENTER to save settings and continue.
ENTER

The WAN interface must have a fixed IP address to utilize this function. For example, if you set Type/Public Port to TCP/80 (HTTP or Web) and the Private IP/ Port to 192.168.2.2/80, then all HTTP request from outside users will be transferred to 192.168.2.2. Therefore, by just entering the IP Address provided by the ISP, Internet users can access the service they need at the local address to which you redirect them.

Some of the more common TCP service ports include:

HTTP: 80, FTP: 21, Telnet: 23 and POP3: 110.

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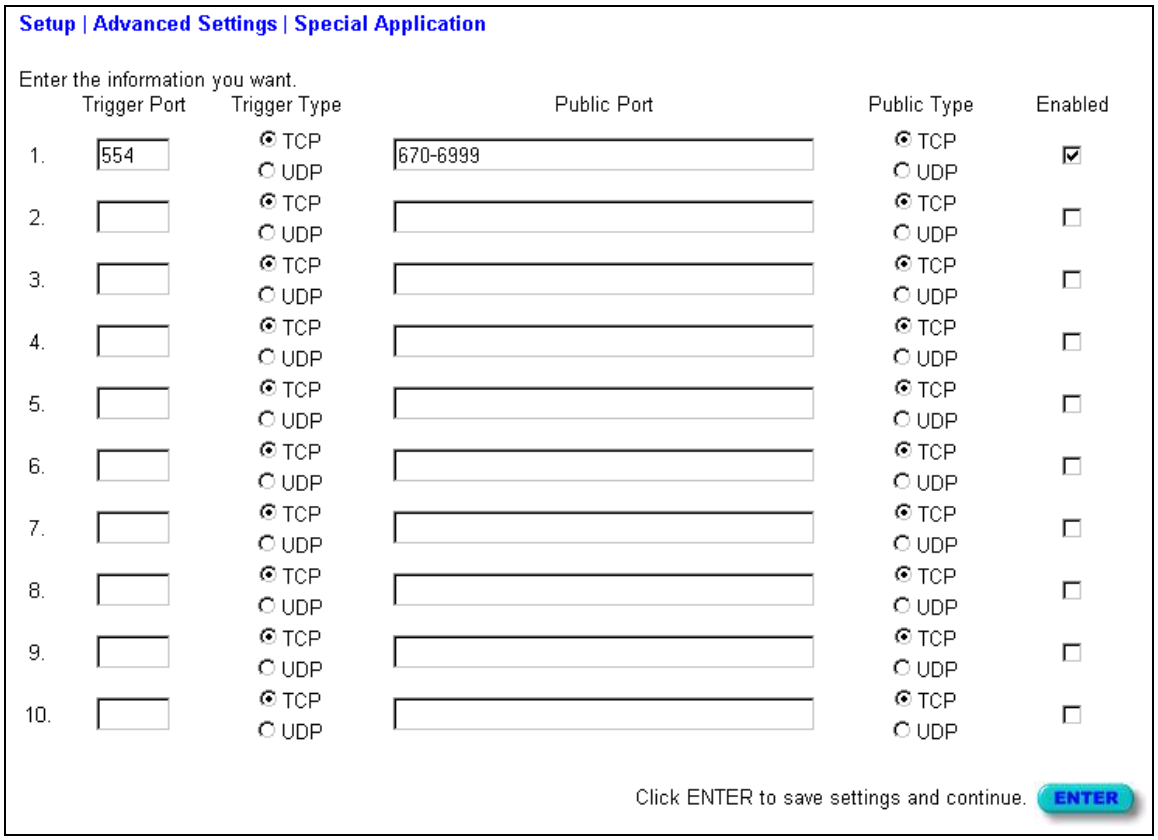
Enabling Special Applications

Some applications (such as Internet gaming, videoconferencing, Internet telephony and others) require multiple connections. These applications cannot work with Network Address Translation (NAT) enabled. If you need to run applications that require multiple connections, use the following screen to specify the additional public ports to be opened for each application.


Setup | Advanced Settings | Special Application
Enter the information you want.
Trigger Port
Trigger Type
Public Port
Public Type
Enabled
1. 554 TCP UDP 670-6999 TCP UDP
2. TCP UDP TCP UDP
3. TCP UDP TCP UDP
4. TCP UDP TCP UDP
5. TCP UDP TCP UDP
6. TCP UDP TCP UDP
7. TCP UDP TCP UDP
8. TCP UDP TCP UDP
9. TCP UDP TCP UDP
10. TCP UDP TCP UDP
Click ENTER to save settings and continue.
ENTER

Specify the port normally associated with an application in the “Trigger Port” field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

Note: If an application still cannot function correctly after enabling multiple ports via the Special Application screen, you may have to open the client PC for full Internet access using the DMZ Host option on the “Misc” screen.

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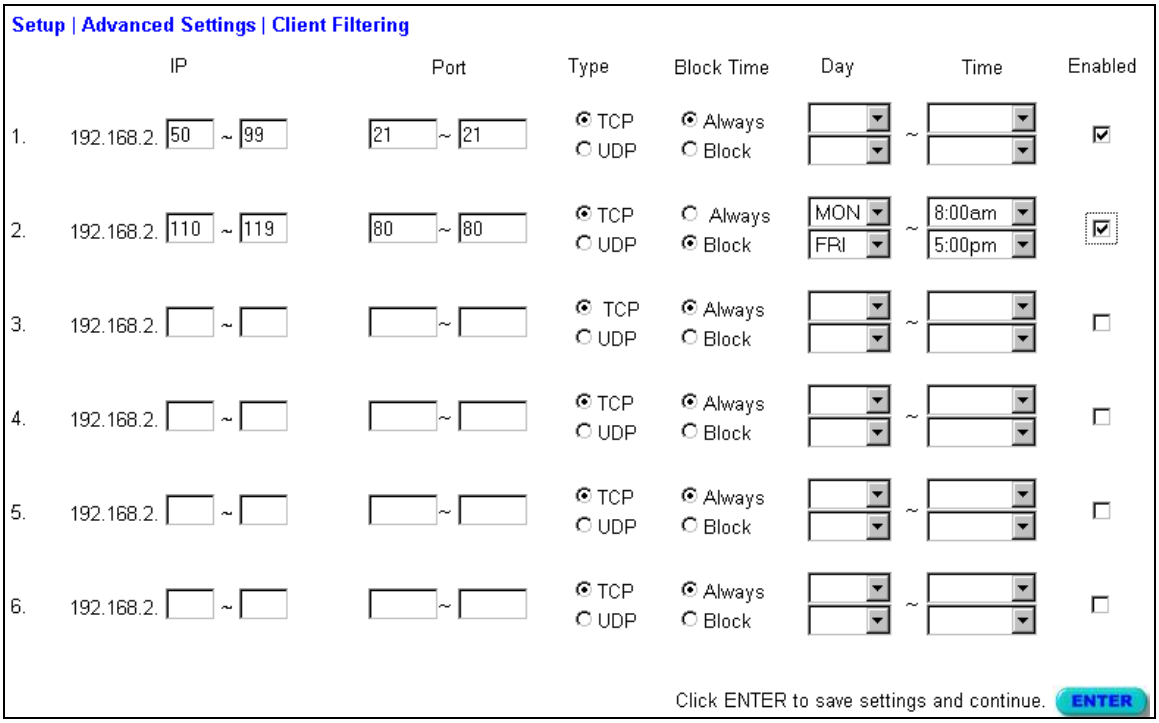
Client Filtering

You can filter Internet access for local clients based on IP address, application type (i.e., HTTP port), and time of day.


Setup | Advanced Settings | Client Filtering
IP
Port
Type
Block Time
Day
Time
Enabled
1. 192.168.2. 50 ~ 99 21 ~ 21 TCP UDP Always Block ~
2. 192.168.2. 110 ~ 119 80 ~ 80 TCP UDP Always Block MON FRI 8:00am 5:00pm ~
3. 192.168.2. ~ TCP UDP Always Block ~
4. 192.168.2. ~ TCP UDP Always Block ~
5. 192.168.2. ~ TCP UDP Always Block ~
6. 192.168.2. ~ TCP UDP Always Block ~
Click ENTER to save settings and continue.
ENTER

For example, this screen shows that clients in the address range 192.168.2.50-99 are permanently restricted from using FTP (Port 21), while clients in the address range 192.168.2.110-119 are blocked from browsing the Internet from Monday through Friday.

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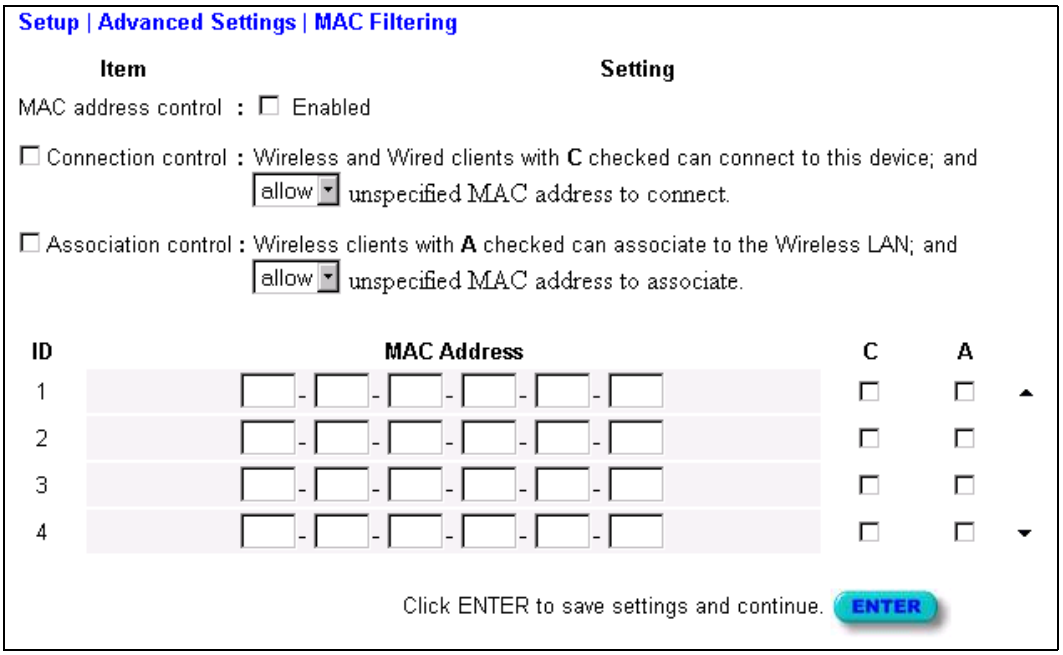
MAC Filtering

You can filter Internet access for local wired and wireless clients based on MAC address.


Setup | Advanced Settings | MAC Filtering
Item
Setting
MAC address control : Enabled
Connection control : Wireless and Wired clients with C checked can connect to this device; and
allow unspecified MAC address to connect.
Association control : Wireless clients with A checked can associate to the Wireless LAN; and
allow unspecified MAC address to associate.
ID
MAC Address
C
A
1
2
3
4
Click ENTER to save settings and continue.
ENTER

MAC Address Control: Every client that connects to the network has a unique MAC (Media Access Control) address on his or her Ethernet adapter. An administrator can have more control—and more security—over the network by specifying which MAC addresses are allowed to access the CheetahAccess Wireless Gateway. You can enable this feature by checking the “Enabled” box.

Connection Control: Connection control allows an administrator to allow or deny clients access to the CheetahAccess Wireless Gateway and the Internet. Check “Connection control” to control which of the wired AND wireless clients will be able to “connect” to the CheetahAccess Wireless Gateway and to the Internet. If a client is denied “connection” to this device, it means that the client cannot access the Internet and some network resources. Choose “Allow” or “Deny” to allow or deny clients whose MAC addresses are not listed in the “Control table.”

When a wired client is allowed to “connect” to the CheetahAccess Wireless Gateway, it means that it has full access to the Internet and network resources.

When a wired client is not allowed to “connect” to the CheetahAccess Wireless Gateway, it means that it CAN communicate with the other clients on the wired LAN, but CANNOT:

- Connect to the Internet
- Use the Print Server function
- Communicate with the clients on the wireless LAN
- Use the CheetahAccess Wireless Gateway’s Web configuration

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Association Control: The Association process is the exchange of information between wireless clients and a wireless access point to establish a link between them. A wireless client is capable of transmitting and receiving data to an access point only after the association process is sucessfully completed.

Association control allows an administrator to allow or deny wireless clients from linking to the CheetahAccess Wireless Gateway. Check “Association control” to control which of the wireless clients will be able to “associate” to the wireless LAN. If a client is denied “association” to the wireless LAN, it means that the client cannot send or receive any data through the CheetahAccess Wireless Gateway. Choose “Allow” or “Deny” to allow or deny clients whose MAC addresses are not listed in the “Control table.”

When a wireless client is allowed to “associate” to the wireless LAN, and “connect” to the CheetahAccess Wireless Gateway, that means it can have full access to the Internet and network resources.

When a wireless client is NOT allowed to “associate” to the wireless LAN, it means that it CANNOT:

- Communicate with any others clients on the LAN (neither wired nor wireless)
- Connect to the Internet
- Use the Print Server function
- Use the CheetahAccess Wireless Gateway’s Web configuration
- “Connect” to the CheetahAccess Wireless Gateway

When a wireless client is allowed to “associate” to the wireless LAN, but NOT “connect” to the CheetahAccess Wireless Gateway, it means that it can communicate with others clients on the wireless LAN, but CANNOT:

- Communicate with any clients on the wired LAN
- Connect to the Internet
- Use the Print Server function
- Use the CheetahAccess Wireless Gateway’s Web configuration

Association control has no effect on wired clients.

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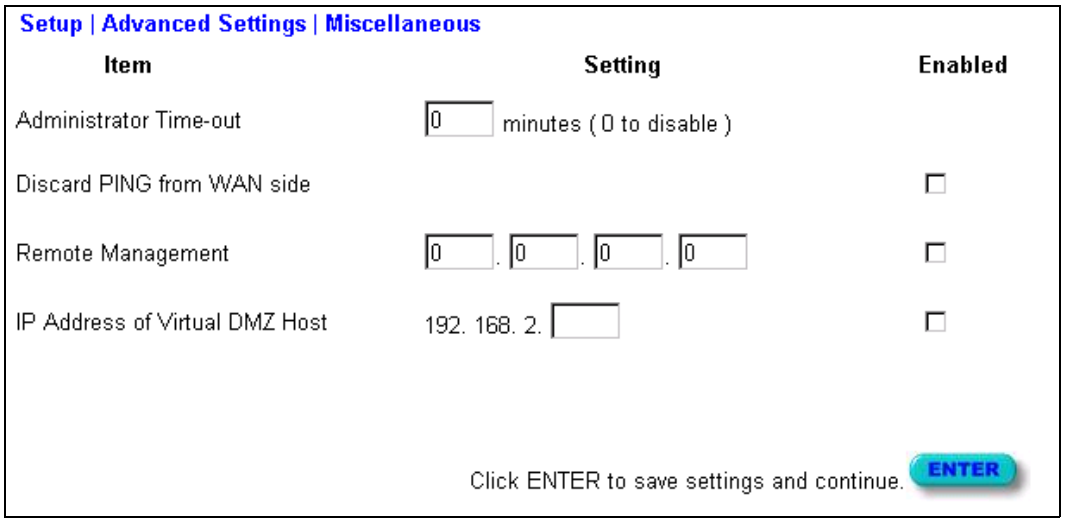
Miscellaneous Settings

The CheetahAccess Wireless Gateway also allows you set a timeout for administrator access, prevent external PINGs from causing security problems, set up remote management, and configure a Virtual DMZ Host.



Administrator Time-out – Enter a time-out setting in minutes for administrator access protection.

Discard PING from WAN side – You can enhance your network security by preventing any PING on the CheetahAccess Wireless Gateway's WAN port from being routed to the network.

Remote Management – By default, management access is only available to users on your local network. However, you can also manage the CheetahAccess Wireless Gateway from a remote host by adding the IP address of an administrator to this screen.

Note: If you specify an IP address of 0.0.0.0, any host can manage the CheetahAccess Wireless Gateway.

Virtual DMZ Host – If you have a client PC that cannot run an Internet application properly from behind the NAT firewall or after configuring the Special Applications function, then you can open the client up to unrestricted two-way Internet access.

Enter the IP address of a DMZ host to this screen. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.

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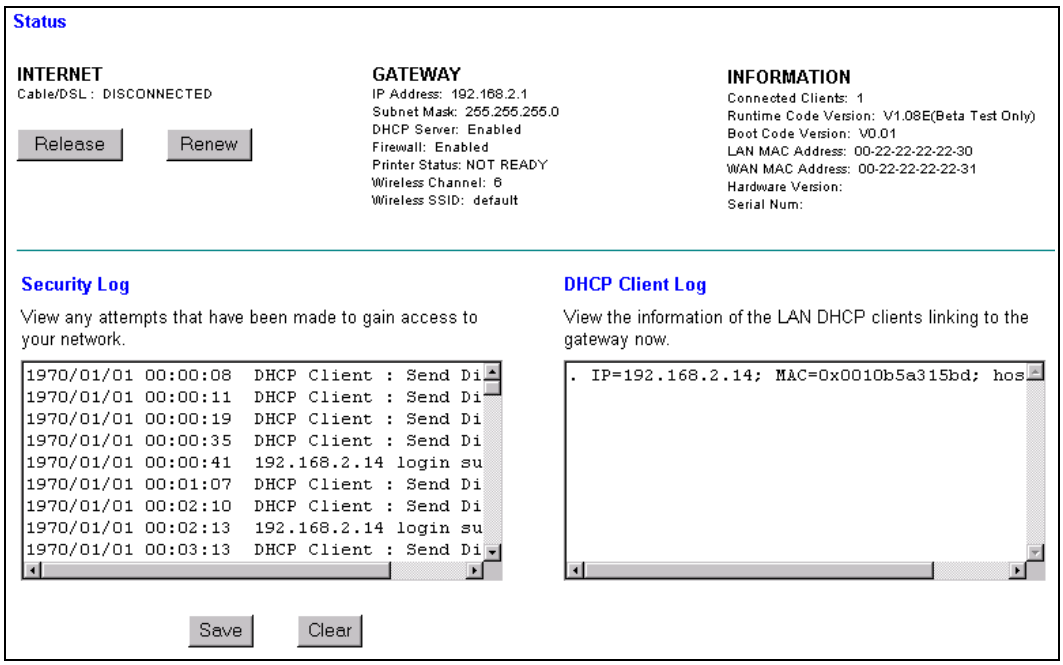
Viewing Network and Device Status

You can use the following screen to display the connection status for the WAN/ WLAN/LAN interfaces, firmware and hardware version numbers, any illegal attempts to access your network, as well as information on all DHCP clients connected to your network.


Status
INTERNET
Cable/DSL : DISCONNECTED
Release
Renew
GATEWAY
IP Address: 192.168.2.1
Subnet Mask: 255.255.255.0
DHCP Server: Enabled
Firewall: Enabled
Printer Status: NOT READY
Wireless Channel: 6
Wireless SSID: default
INFORMATION
Connected Clients: 1
Runtime Code Version: V1.08E(Beta Test Only)
Boot Code Version: V0.01
LAN MAC Address: 00-22-22-22-22-30
WAN MAC Address: 00-22-22-22-22-31
Hardware Version:
Serial Num:
Security Log
View any attempts that have been made to gain access to your network.
1970/01/01 00:00:08 DHCP Client : Send Di
1970/01/01 00:00:11 DHCP Client : Send Di
1970/01/01 00:00:19 DHCP Client : Send Di
1970/01/01 00:00:35 DHCP Client : Send Di
1970/01/01 00:00:41 192.168.2.14 login su
1970/01/01 00:01:07 DHCP Client : Send Di
1970/01/01 00:02:10 DHCP Client : Send Di
1970/01/01 00:02:13 192.168.2.14 login su
1970/01/01 00:03:13 DHCP Client : Send Di
DHCP Client Log
View the information of the LAN DHCP clients linking to the gateway now.
. IP=192.168.2.14; MAC=0x0010b5a315bd; hos
Save
Clear

The following items are included in this screen:

Field	Description
INTERNET	Displays WAN connection type and status.
Release	Click on this button to release the WAN IP address.
Renew	Click on this button to renew the WAN IP address.
GATEWAY	Displays system IP settings, the status for DHCP, and Firewall services, as well as the wireless interface settings.
INFORMATION	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, as well as the hardware version and serial number.
Security Log	Displays any illegal attempts to access your network.
Save	Click on this button to save the security log to a file.
Clear	Click on this button to clear the security log.
DHCP Client Log	Displays information on all DHCP clients on your network.

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Using System Tools

Tools
Use these tools to manage your CheetahAccess Internet Gateway.
Reset CheetahAccess Internet Gateway will reboot the CheetahAccess Internet Gateway and retain all of your configuration settings.
Restore Factory Defaults will remove all settings and place the CheetahAccess Internet Gateway in its original factory state.
Update Firmware will allow you to upgrade the firmware on your CheetahAccess Internet Gateway using a file from the Accton web site.
Backup Settings
Restore Settings

You can use the “Tools” menu to reboot the CheetahAccess Wireless Gateway, restore factory settings, or update firmware.

Note: If you use the “Reset” button on the front panel, the CheetahAccess Wireless Gateway performs a power reset and restores the factory settings.

The “Backup Settings” button allows you to save your CheetahAccess Wireless Gateway’s current configuration to a file named “config.bin” on your PC. You can then click on the “Restore Settings” button to restore the saved configuration to the CheetahAccess Wireless Gateway.

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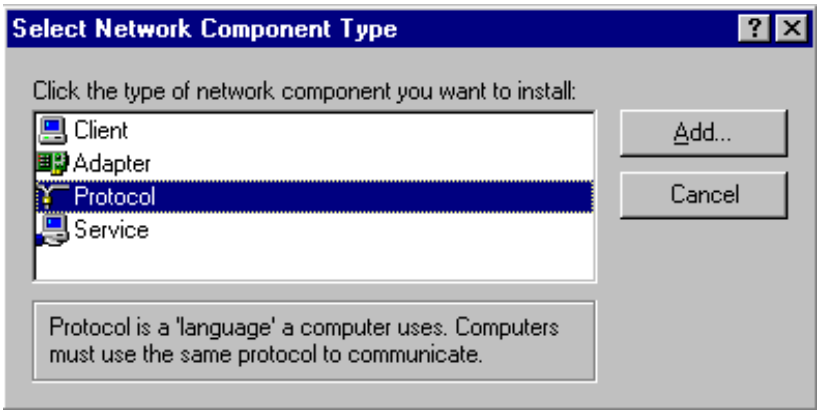
Chapter 5: Configuring Client TCP/IP

If you have not previously installed the TCP/IP protocol on your client PCs, refer to the following section. If you need information on how to configure a TCP/IP address on a PC, refer to “Setting TCP/IP to Work with the CheetahAccess™ Wireless Gateway” on page 5-2.

Installing TCP/IP Protocol in Your PC

1. Click the “Start” button and choose “Settings,” then click “Control Panel.”
2. Double click the “Network” icon and select the “Configuration” tab in the Network window.
3. Click the “Add” button to add the network component to your PC.
4. Double click “Protocol” to add the TCP/IP protocol.



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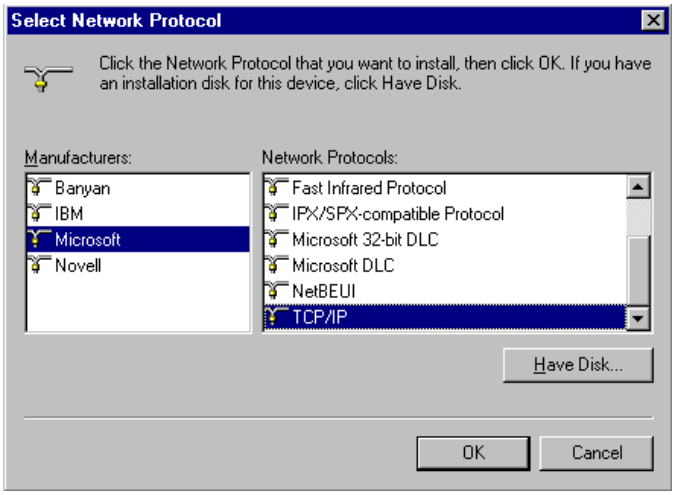
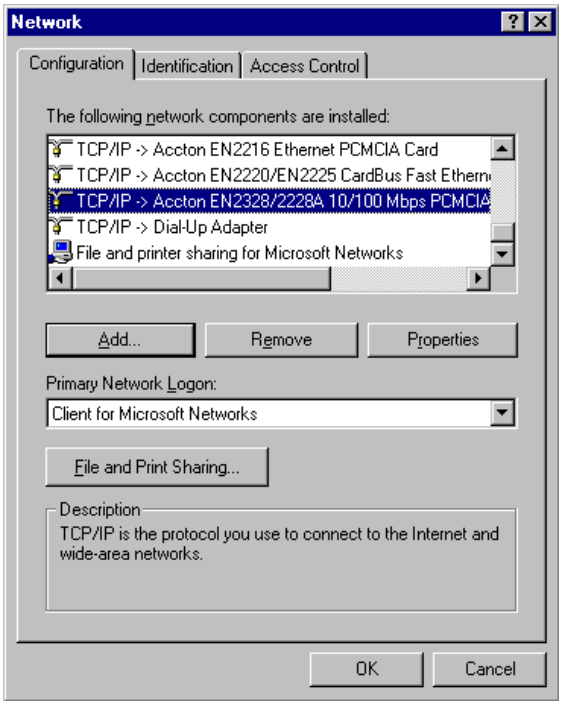
5. Select the “Microsoft” item in the manufacturers list. And choose “TCP/IP” in the Network Protocols. Click the “OK” button to return to the Network window.



6. The TCP/IP protocol will be listed in the Network window. Click “OK” to complete the install procedure and restart your PC to enable the TCP/IP protocol.

Setting TCP/IP to Work with the CheetahAccess™ Wireless Gateway

1. Click the “Start” button and choose “Settings,” then click “Control Panel.”
2. Double click the “Network” icon. Select the TCP/IP line that has been assigned to your network card in the “Configuration” tab of the Network window.



3. Click the “Properties” button to set the TCP/IP protocol for the CheetahAccess Wireless Gateway.

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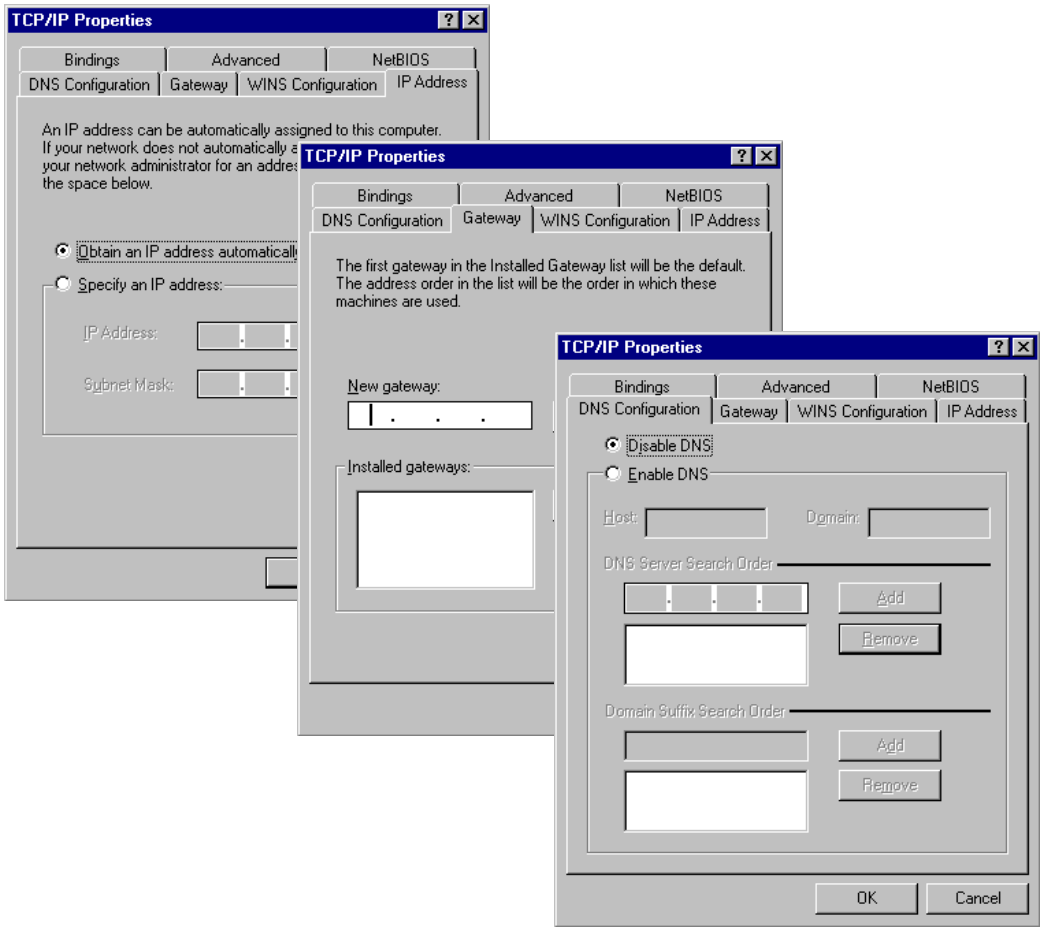
4. You can dynamically assign TCP/IP address settings to a client, or you can manually configure a client with address settings to meet your specific network requirements. (Note that the default IP address of the CheetahAccess Wireless Gateway is 192.168.2.1.)

Dynamic IP Allocation via a DHCP Server

Select “Obtain an IP address automatically” in the IP Address tab. Do not input any values under the “Gateway” tab, and choose “Disable DNS” in the “DNS Configuration” tab. These settings will be automatically configured by the DHCP server. Click “OK” and reboot your system to implement the changes.



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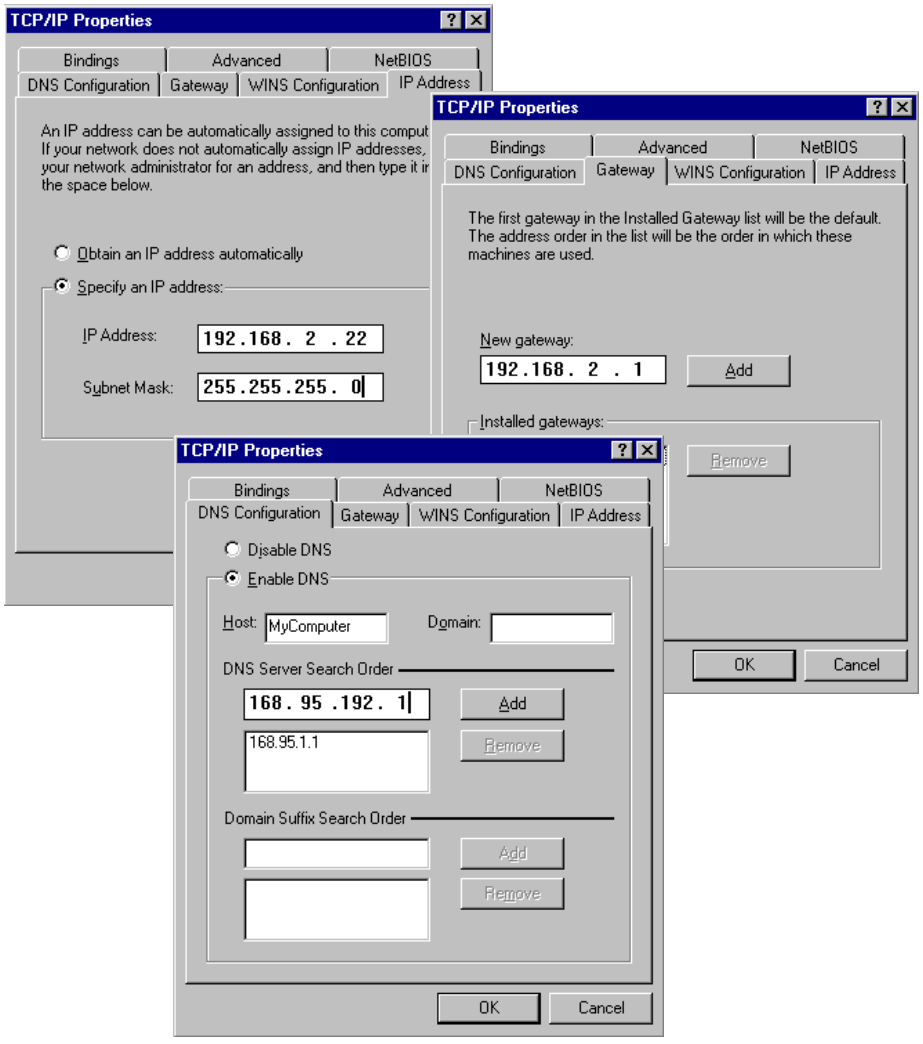
Manual IP Configuration

1. Select “Specify an IP address” in the “IP Address” tab. Select an IP address based on the default network 192.168.2.X (where X is between 1 and 254), and use 255.255.255.0 for the subnet mask.

2. In the “Gateway” tab, add the IP address of the CheetahAccess Wireless Gateway (default: 192.168.2.1) in the “New gateway” field and click “Add.”

3. In the “DNS Configuration” tab, add the IP address for the CheetahAccess Wireless Gateway and click “Add.” This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add specific DNS servers into the “DNS Server Search Order” field and click “Add.”



4. After finishing TCP/IP setup, click “OK,” and then reboot the computer. After that, set up other PCs on the LAN according to the procedures described above.

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Verifying Your TCP/IP Connection

After installing the TCP/IP communication protocol and configuring an IP address in the same network with the CheetahAccess Wireless Gateway, you can use the “Ping” command to check if your computer is successfully connected to the CheetahAccess Wireless Gateway. The following example shows how the Ping procedure can be executed in an MS-DOS window. First, execute the “Ping” command:

```
ping 192.168.2.1
```

If the following messages appear:

```
Pinging 192.168.2.1 with 32 bytes of data:
Reply from 192.168.2.1: bytes=32 time=2ms TTL=64
```

a communication link between your computer and the CheetahAccess Wireless Gateway has been successfully established.

Otherwise, if you get the following messages,

```
Pinging 192.168.2.1 with 32 bytes of data:
Request timed out.
```

there may be something wrong in your installation procedure. Check the following items in sequence:

1. Is the Ethernet cable correctly connected between the CheetahAccess Wireless Gateway and your computer?

   The LAN LED on the CheetahAccess Wireless Gateway and the Link LED of the network card on your computer must be on.

2. Is TCP/IP properly configured on your computer?

   If the IP address of the CheetahAccess Wireless Gateway is 192.168.2.1, the IP address of your PC must be from 192.168.2.2 - 192.168.2.254 and the default gateway must be 192.168.2.1.

If you can successfully ping the CheetahAccess Wireless Gateway, then you are now ready to connect to the Internet!

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Chapter 6: Configuring Printer Services

If you want to use the print server built into the CheetahAccess™ Wireless Gateway, then you must first install the Port Monitor program as described in the following section for Windows 95/98/ME/NT/2000.

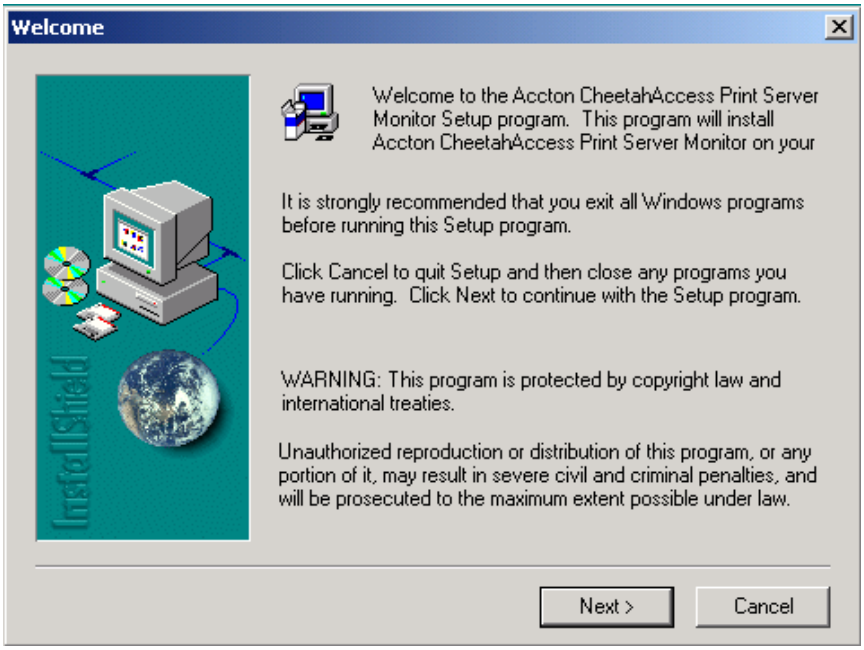
To configure the CheetahAccess Wireless Gateway Print Server for Windows 95/98/ME/NT/2000 or Unix, see “Configure the Print Server” on page 6-4.

Install the Printer Port Monitor

Skip this section if you are using Unix.

For Windows 95/98/ME/NT/2000 clients, you need to install the port monitor program as described in this section.

1. Insert the installation CD-ROM into your CD-ROM drive. Under the PrintSvr directory, run the “setup.exe” program. The Accton Port Monitor installation program advises you to close all other Windows programs currently running on your computer. Click “Next” to continue.


Welcome
Welcome to the Accton CheetahAccess Print Server Monitor Setup program. This program will install Accton CheetahAccess Print Server Monitor on your
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
InstallShield
Next >
Cancel

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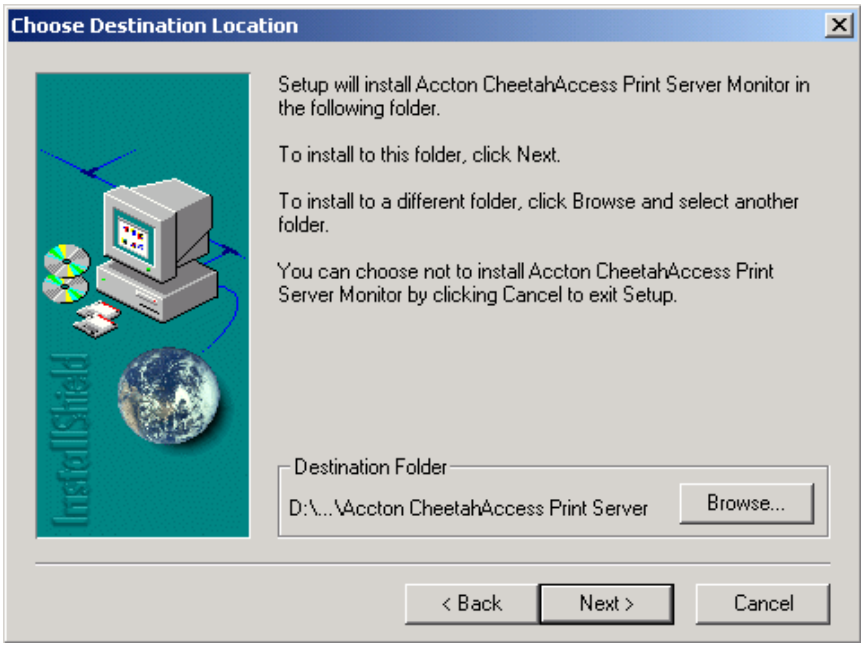
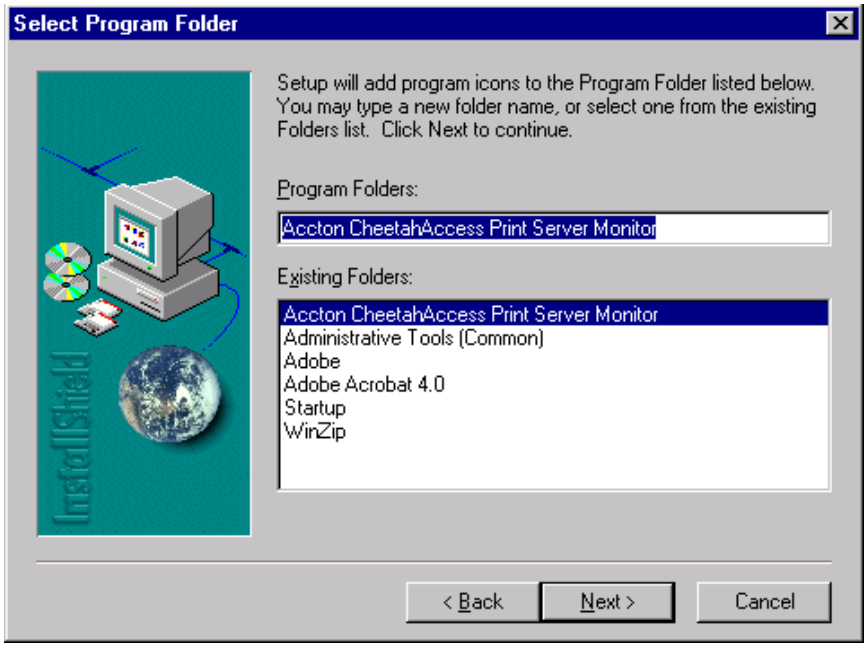
2. Select the destination folder and click on the “Next” button. The setup program will then begin to install the programs into the destination folder.


Choose Destination Location
Setup will install Accton CheetahAccess Print Server Monitor in the following folder.
To install to this folder, click Next.
To install to a different folder, click Browse and select another folder.
You can choose not to install Accton CheetahAccess Print Server Monitor by clicking Cancel to exit Setup.
Destination Folder
D:\...\Accton CheetahAccess Print Server
Browse...
< Back
Next >
Cancel
InstallShield

3. Select the Program Folder that will contain the program icon for uninstalling the port monitor, and then click “Next.”


Select Program Folder
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing Folders list. Click Next to continue.
Program Folders:
Accton CheetahAccess Print Server Monitor
Existing Folders:
Accton CheetahAccess Print Server Monitor
Administrative Tools (Common)
Adobe
Adobe Acrobat 4.0
Startup
WinZip
< Back
Next >
Cancel
InstallShield

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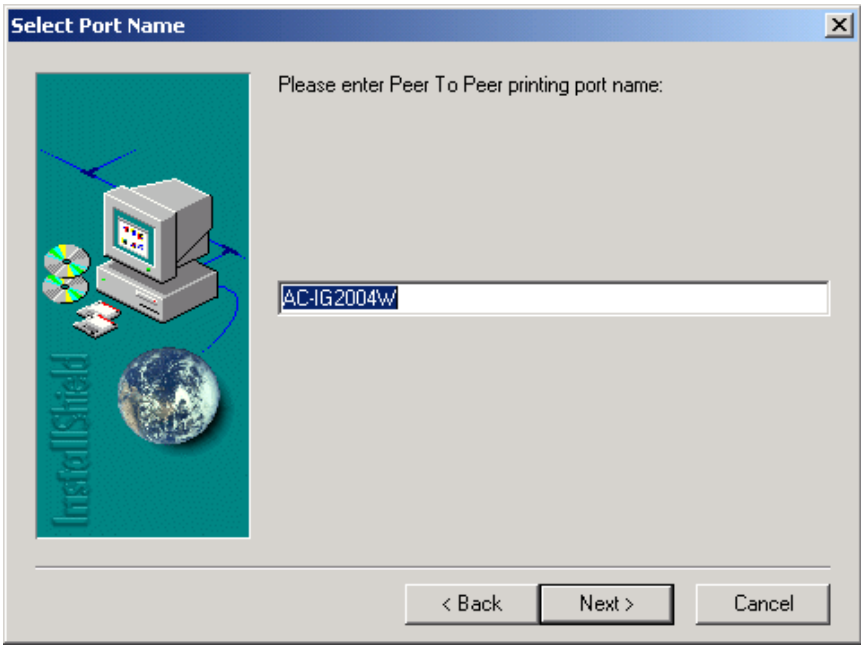
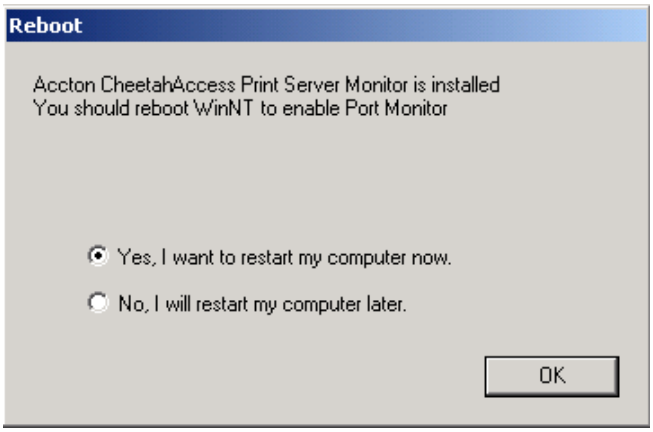
4. Enter the printer port name that will be used to identify the port monitor in your system, and press “Next.”



5. When the setup program finishes installing the port monitor, select the item to restart your computer and then click “OK.”


Reboot
Accton CheetahAccess Print Server Monitor is installed
You should reboot WinNT to enable Port Monitor
Yes, I want to restart my computer now.
No, I will restart my computer later.
OK

6. After rebooting your computer, add the CheetahAccess Wireless Gateway print server to your system as described in the following section.

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Configure the Print Server

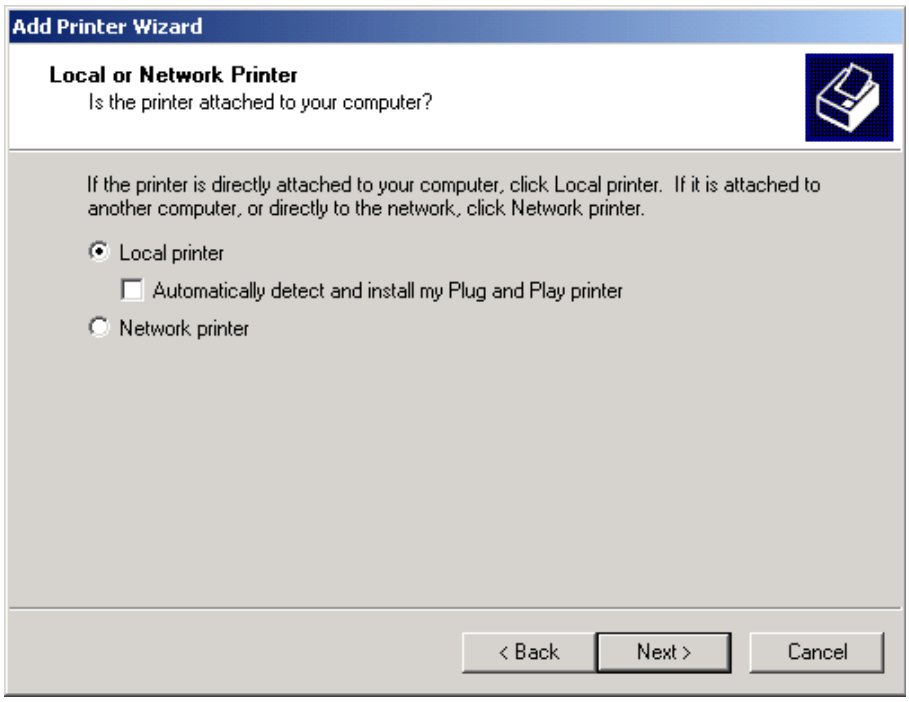
The CheetahAccess Wireless Gateway's print server supports Microsoft Windows 95/98/ME/NT/2000 and Unix. If you are using Windows 95/98/ME/NT/2000, first install the port monitor as described in the previous section before adding the CheetahAccess Wireless Gateway's print server to your operating system.

Configure the Network Printer in Windows 95/98/ME/2000

1. On a Windows 95/98/ME/2000 platform, open the Printers window in the "My Computer" menu, and double-click the "Add Printer" icon.

Printers
File Edit View Favorites Tools Help
Back Search Folders History Links
Address Printers Go
Add Printer
Printers
Add Printer
The Add Printer wizard gives you step-by-step instructions for installing a printer. To install a new printer, double-click the Add Printer icon.
1 object(s) selected

2. Follow the prompts to add a "Local printer" to your system.


Add Printer Wizard
Local or Network Printer
Is the printer attached to your computer?
If the printer is directly attached to your computer, click Local printer. If it is attached to another computer, or directly to the network, click Network printer.
Local printer
Automatically detect and install my Plug and Play printer
Network printer
< Back
Next >
Cancel

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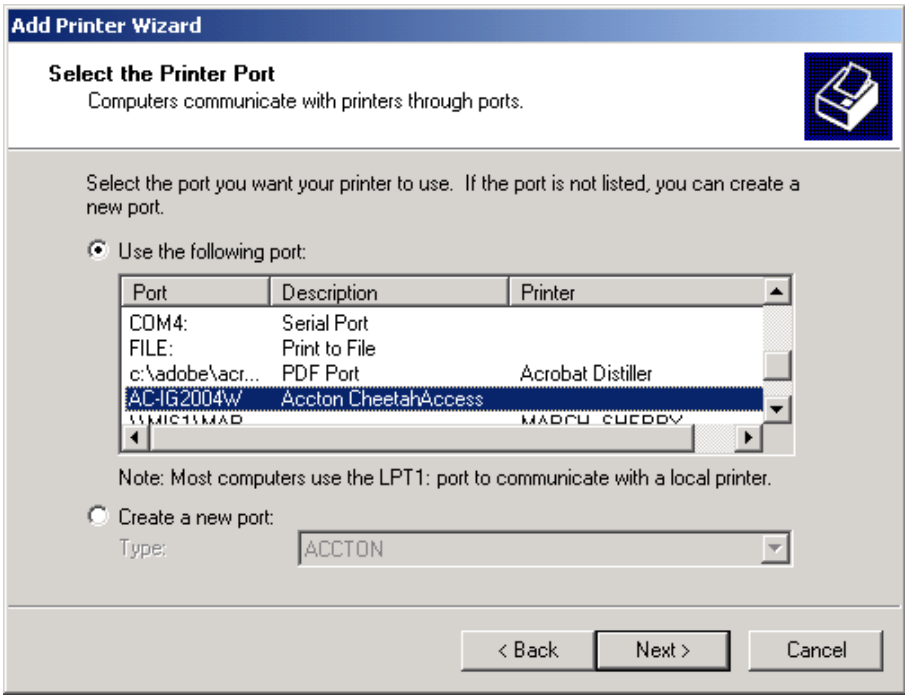
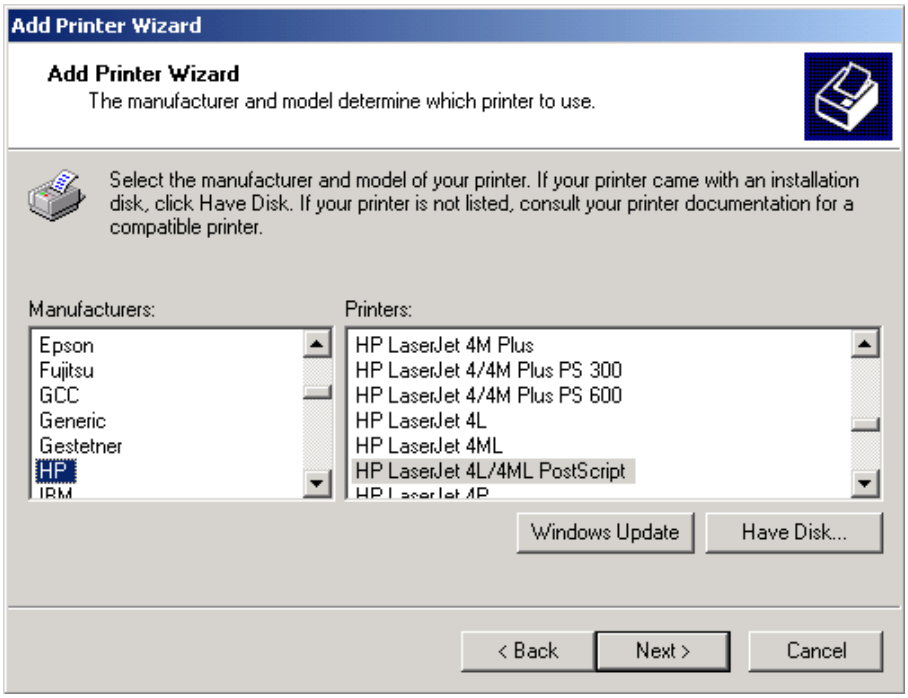
3. Specify the printer type attached to the CheetahAccess Wireless Gateway, and press “Next.”



4. From the list of manufacturers and printers in the next window, select the printer you have attached to the CheetahAccess Wireless Gateway.


Add Printer Wizard
Add Printer Wizard
The manufacturer and model determine which printer to use.
Select the manufacturer and model of your printer. If your printer came with an installation disk, click Have Disk. If your printer is not listed, consult your printer documentation for a compatible printer.
Manufacturers:
Printers:
Epson
Fujitsu
GCC
Generic
Gestetner
HP
IBM
HP LaserJet 4M Plus
HP LaserJet 4/4M Plus PS 300
HP LaserJet 4/4M Plus PS 600
HP LaserJet 4L
HP LaserJet 4ML
HP LaserJet 4L/4ML PostScript
Windows Update
Have Disk...
< Back
Next >
Cancel

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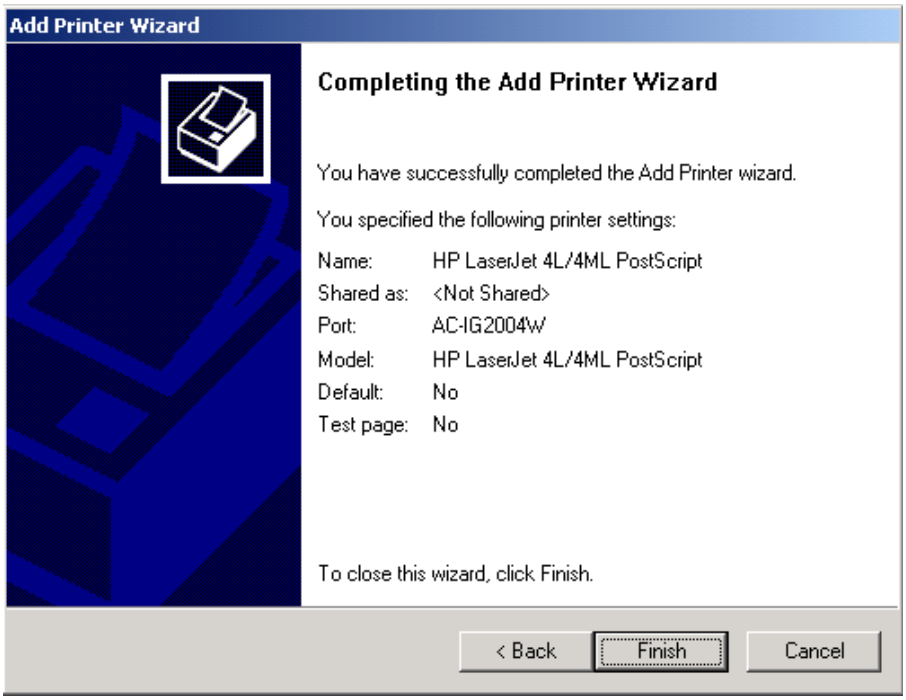
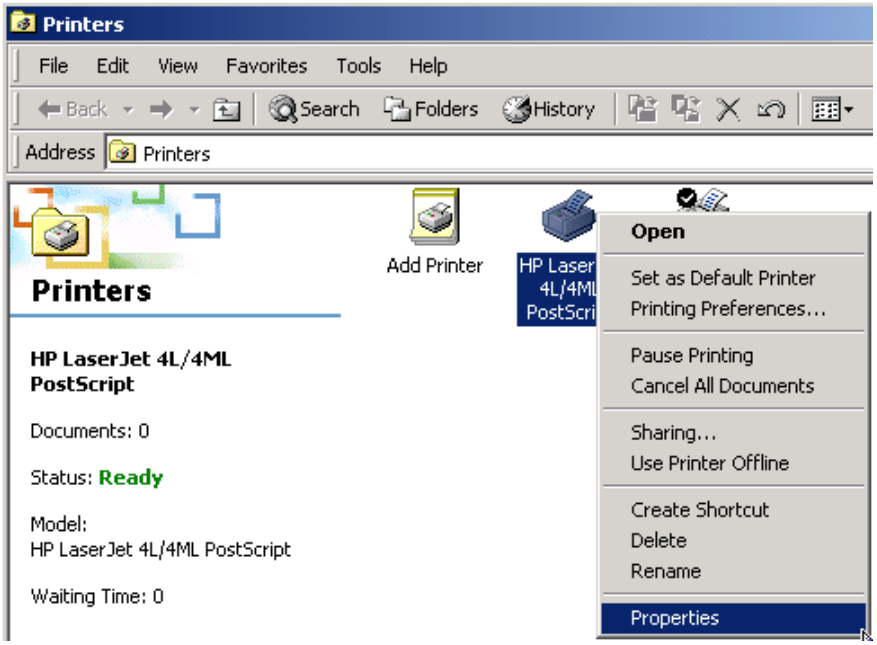
5. Continue following the prompts to finish installing the CheetahAccess Wireless Gateway print server. The printer type you specified will now be added to your “Printers” menu.



6. From the “Start” menu, click “Settings,” and then select “Printers.”

7. Choose the installed printer, click on the right-mouse button, and then select “Properties.”



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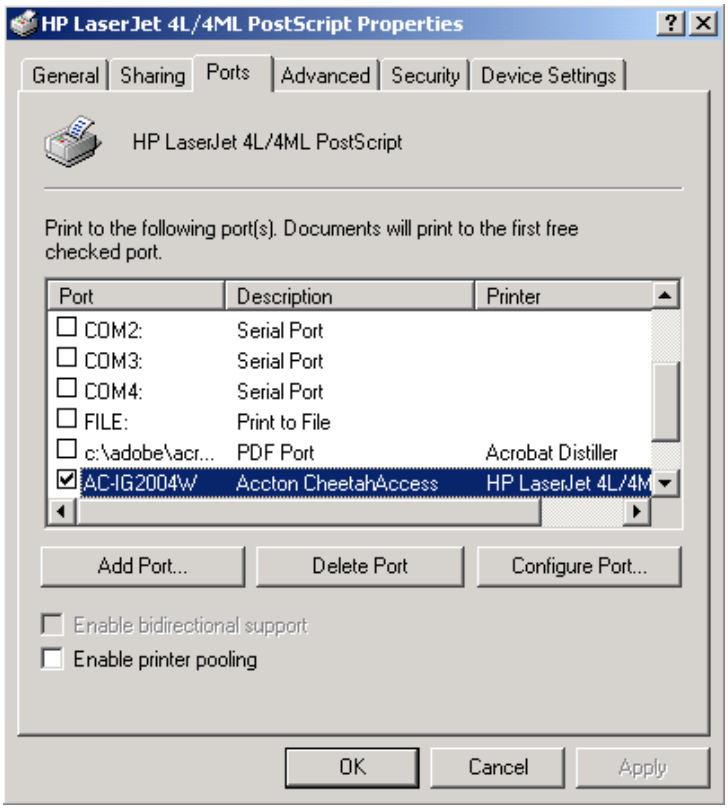
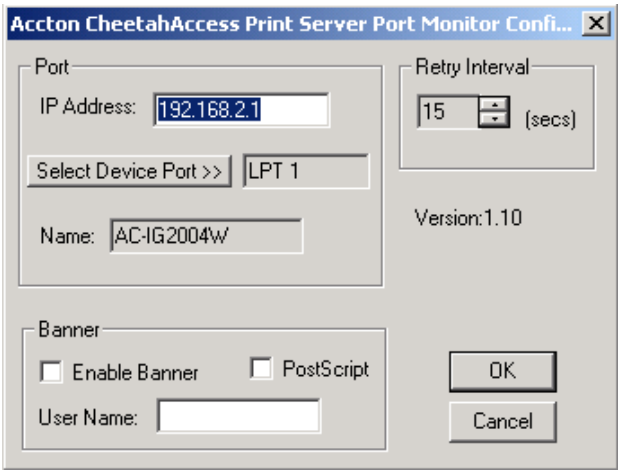
8. Select the “Ports” tab in the Properties window.

9. Select the monitored port (the default port name is “AC-IG2004W”) and then click the “Configure Port” button.



10. Enter the IP address of the CheetahAccess Wireless Gateway and click “OK,” and then click “Next” in the Add Printer Wizard dialog box.



11. Continue following the prompts to finish configuring the CheetahAccess Wireless Gateway print server.

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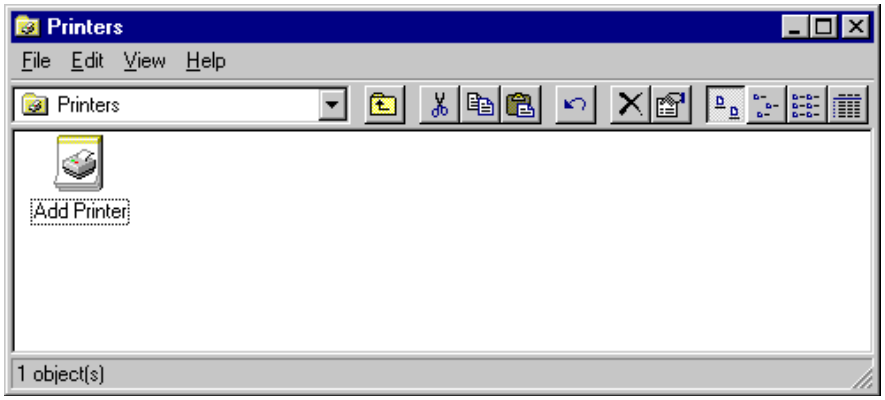
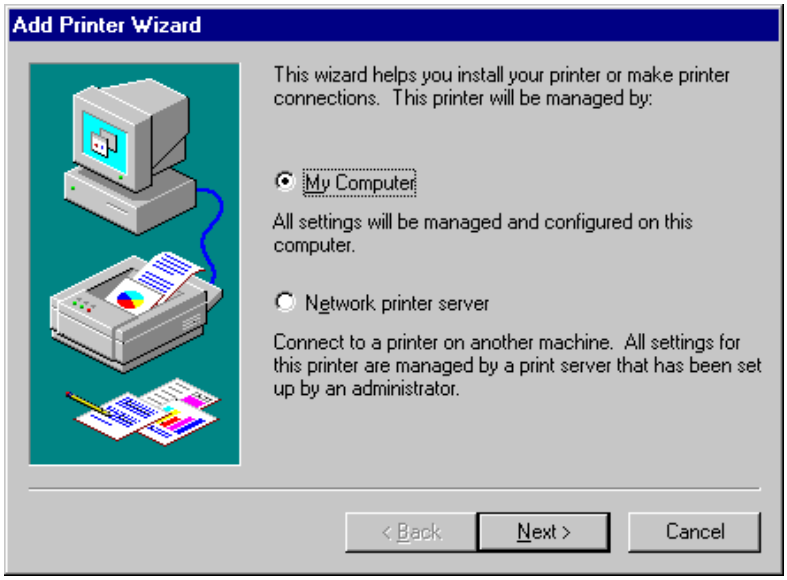
Configure the Network Printer in Windows NT

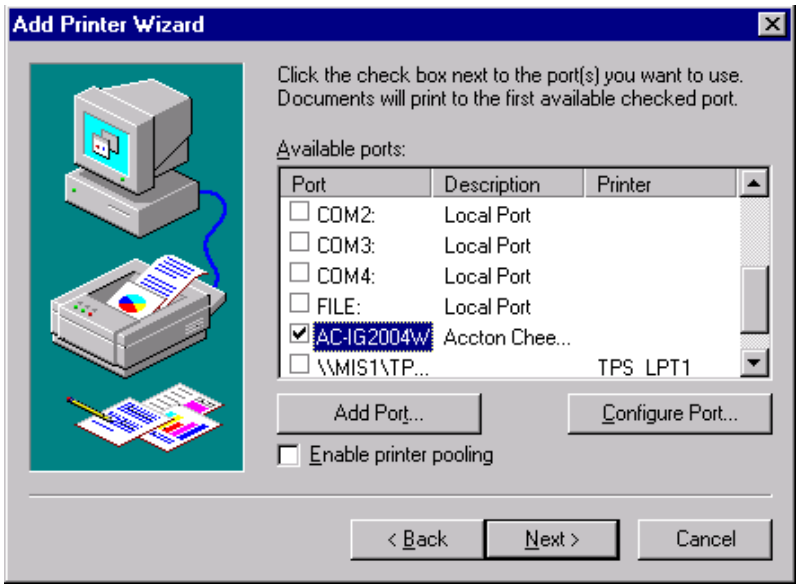
1. On a Windows NT platform, open the Printers window in the My Computer menu, and double-click the *Add Printer* icon.



2. Follow the prompts to add a local printer to your system.


Add Printer Wizard
This wizard helps you install your printer or make printer connections. This printer will be managed by:
My Computer
All settings will be managed and configured on this computer.
Network printer server
Connect to a printer on another machine. All settings for this printer are managed by a print server that has been set up by an administrator.
< Back
Next >
Cancel

3. Select the monitored port. The default port name is “AC-IG2004W.” Then click the “Configure Port” button.



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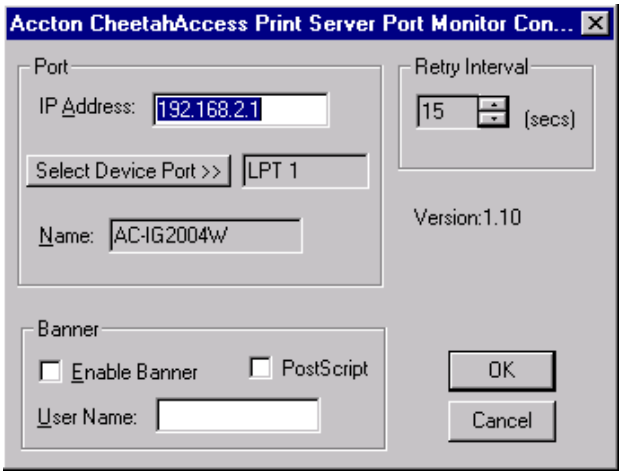
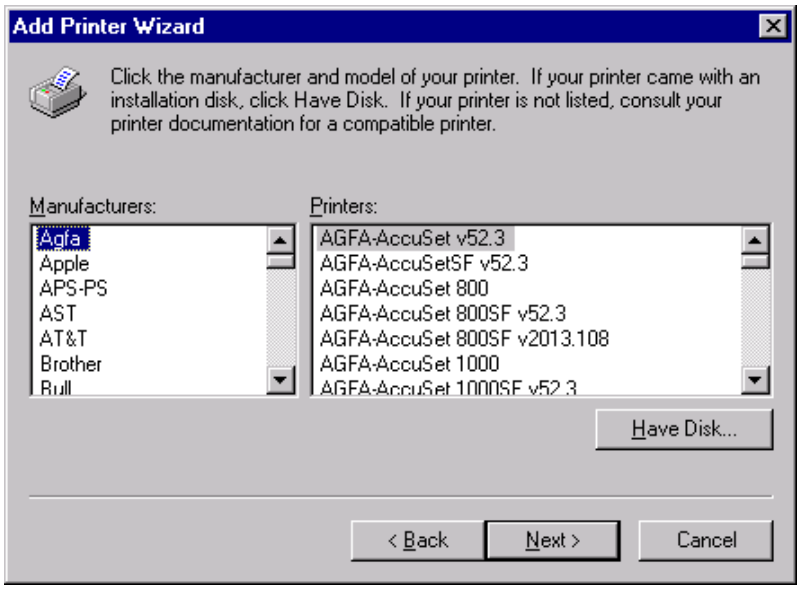
4. Enter the IP address of the CheetahAccess Wireless Gateway and click “OK,” and then click “Next” in the Add Printer Wizard dialog box.



5. Specify the printer type attached to the CheetahAccess Wireless Gateway.



6. Continue following the prompts to finish installing the CheetahAccess Wireless Gateway print server. The printer type you specified will now be added to your “Printers” menu.

Configure the Network Printer in Unix Systems

Follow the traditional configuration procedure on Unix platforms to set up the CheetahAccess Wireless Gateway print server. The printer name is “lpt1.”

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Appendix A: Troubleshooting

This appendix describes common problems you may encounter and possible solutions. The CheetahAccess™ Wireless Gateway can be easily monitored through panel indicators to identify problems. If you cannot resolve any connection problems after checking the indicators, then refer to the other sections in the following table.

Troubleshooting Chart	
Symptom	**Action**
LED Indicators	
Power LED is Off	• External power supply has failed or is disconnected. • Check connections between the CheetahAccess Wireless Gateway, the external power supply, and the wall outlet. • If the power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or external power supply. However, if the unit powers off after running for a while, check for loose power connections, power losses or surges at the power outlet. If you still cannot isolate the problem, then the external power supply may be defective. In this case, contact Accton Technical Support for assistance.
LED Indicators	
Link LED is Off	• Verify that the CheetahAccess Wireless Gateway and attached device are powered on. • Be sure the cable is plugged into both the CheetahAccess Wireless Gateway and the corresponding device. • Verify that the proper cable type is used and its length does not exceed specified limits. • Be sure that the network interface on the attached device is configured for the proper communication speed and duplex mode. • Check the adapter on the attached device and cable connections for possible defects. Replace any defective adapter or cable if necessary.

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Troubleshooting Chart	
Symptom	**Action**
Network Connection Problems	
Cannot ping the CheetahAccess Wireless Gateway from the attached LAN, or the CheetahAccess Wireless Gateway cannot ping any device on the attached LAN	• Verify that IP addresses are properly configured. For most applications, you should use the CheetahAccess Wireless Gateway's DHCP function to dynamically assign IP addresses to any host on the attached LAN. However, if you manually configure any IP addresses on the LAN, verify that the same network address (network component of the IP address) and subnet mask are used for both the CheetahAccess Wireless Gateway and attached LAN devices. • Be sure the device you want to ping (or from which you are pinging) has been configured for TCP/IP.
Mobile users cannot access the CheetahAccess Wireless Gateway	• Make sure that the CheetahAccess Wireless Gateway and all mobile users are configured to use the same radio channel, wireless domain (SSID), and encryption keys. • Ensure that all mobile users are within range of the CheetahAccess Wireless Gateway as specified in Appendix C.
Management Problems	
Cannot connect using the Web browser	• Be sure to have configured the CheetahAccess Wireless Gateway with a valid IP address, subnet mask and default gateway. • Check that you have a valid network connection to the CheetahAccess Wireless Gateway and that the port you are using has not been disabled. • Check network cabling between the management station and the CheetahAccess Wireless Gateway.
Forgot or lost the password	• Press the "Reset" button on the rear panel to restore the factory defaults.
Printer Server	
The printer cannot print or prints garbage	• Make sure the parallel cable between the CheetahAccess Wireless Gateway and printer is connected and is in good condition

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Appendix B: Cables

Ethernet Cable

Specifications

Cable Types and Specifications			
Cable	**Type**	**Max. Length**	**Connector**
10BASE-T	Cat. 3, 4, 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45

Twisted-pair Cable

Caution: DO-NOT plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

For 10BASE-T/100BASE-TX connections, a twisted-pair cable must have two pairs of wires. Each wire pair is identified by two different colors. For example, one wire might be red and the other, red with white stripes. Also, an RJ-45 connector must be attached to both ends of the cable. All RJ-45 ports on the CheetahAccess™ Wireless Gateway, except for the WAN port, support automatic MDI/MDI-X configuration. This means that you can use straight-through cable to attach the LAN ports to any network device. However, when connecting the WAN port to a broadband modem, you will need to use either straight-through or crossover cable, depending on the port type used on the modem.

Figure B-1 illustrates how the pins on the RJ-45 connector are numbered. Be sure to hold the connectors in the same orientation when attaching the wires to the pins.

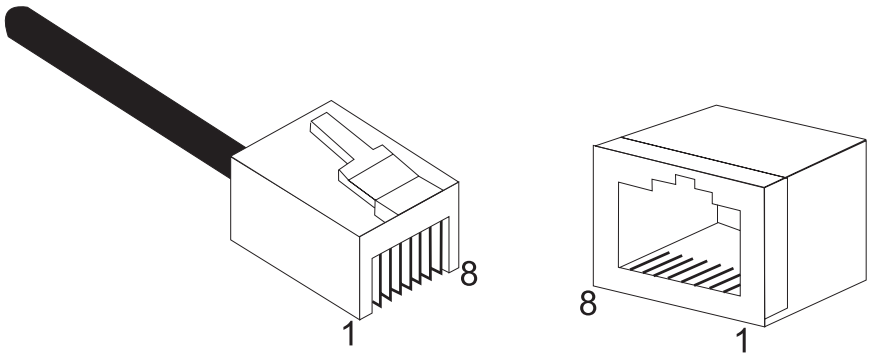

Figure B-1. RJ-45 Connector Pin Numbers

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Straight-through Cable

Straight-Through RJ-45 Pin Assignments	
End 1	End 2
1 (TD+)	1 (TD+)
2 (TD-)	2 (TD-)
3 (RD+)	3 (RD+)
6 (RD-)	6 (RD-)

Pins 4, 5, 7 and 8 are not connected.

Crossover Cable

Crossover RJ-45 Pin Assignments	
End 1	End 2
1 (TD+)	3 (RD+)
2 (TD-)	6 (RD-)
3 (RD+)	1 (TD+)
6 (RD-)	2 (TD-)

Pins 4, 5, 7 and 8 are not connected.

RJ-45 Port Pin Assignments

All LAN ports on the CheetahAccess Wireless Gateway support automatic MDI/MDI-X configuration. This means that the pin signals in use will depend on whether the LAN port is operating in MDI or MDI-X mode. However, the WAN port is configured only for MDI-X mode.

Pin	MDI Signal Name*	MDI-X Signal Name*
1	Transmit Data (TD+)	Receive Data (RD+)
2	Transmit Data (TD-)	Receive Data (RD-)
3	Receive Data (RD+)	Transmit Data (TD+)
6	Receive Data (RD-)	Transmit Data (RD-)

Pins 4, 5, 7 and 8 are not connected.

* The “+” and “-” signs represent the polarity of the wires that make up each wire pair.

Caution: DO NOT plug a phone jack connector into any RJ-45 port. For Ethernet connections, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

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Serial Port Pin Assignments

The DB-9 serial port on the rear panel is used to connect the CheetahAccess Wireless Gateway to an ISDN TA or PSTN modem. The pin assignments used to connect to this port are provided in the following tables.

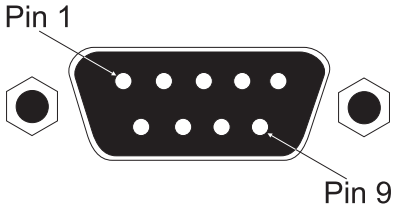

Figure B-2. DB-9 Serial Port Pin Numbers

DB-9 Port Pin Assignments

EIA Circuit	CCITT Signal	Description	Gateway's DB9 DTE Pin #	PC DB9 DTE Pin #	Modem DB25 DCE Pin #	Signal Direction DTE-DCE
CF	109	**DCD** (Data Carrier Detected)	1	1	8	<------
BB	104	**RxD** (Received Data)	2	2	3	<------
BA	103	**TxD** (Transmitted Data)	3	3	2	------>
CD	108.2	**DTR** (Data Terminal Ready)	4	4	20	------>
AB	102	**SG** (Signal Ground)	5	5	7	-------
CC	107	**DSR** (Data Set Ready)	6	6	6	<------
CA	105	**RTS** (Request-to-Send)	7	7	4	------>
CB	106	**CTS** (Clear-to-Send)	8	8	5	<------
CE	125	**RI** (Ring Indicator)	9	9	22	<------

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Serial Port to 9-Pin COM Port on PC

Gateway's 9-Pin Serial Port	CCITT Signal	PC's 9-Pin COM Port
1 DCD	---------- DCD ----------	1
2 RXD	<--------- TXD ----------	3
3 TXD	---------- RXD ---------->	2
4 DTR	---------- DSR ---------->	6
5 SGND	---------- SGND ----------	5
6 DSR	---------- DTR ----------	4
7 RTS	---------- CTS ---------->	8
8 CTS	<--------- RTS ----------	7
9 RI	---------- RI ----------	9

Serial Port to 25-Pin DCE Port on Modem

Gateway's 9-Pin Serial Port	CCITT Signal	Modem's 25-Pin DCE Port
1	<--------- DCD ----------	8
2	<--------- RXD ----------	3
3	---------- TXD ---------->	2
4	---------- DTR ---------->	20
5	---------- SGND ----------	7
6	<--------- DSR ----------	6
7	---------- RTS ---------->	4
8	<--------- CTS ----------	5
9	<--------- RI ----------	22

Serial Port to 25-Pin DTE Port on PC

Gateway's 9-Pin Serial Port	Null Modem	PC's 25-Pin DTE Port
1 DCD	1 — 1	8 DCD
2 RXD	2 — 3	3 TXD
3 TXD	3 — 2	2 RXD
4 DTR	4 — 8	20 DTR
5 SGND	5 — 20	7 SGND
6 DSR	6 — 7	6 DSR
7 RTS	7 — 4	4 RTS
8 CTS	9 — 5	5 CTS
9 RI	20 — 6	22 RI

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Printer Port Pin Assignments

The DB-25 parallel port on the CheetahAccess Wireless Gateway's rear panel is used to connect the CheetahAccess Wireless Gateway to a printer. When a printer is attached to this port, any PCs attached to the CheetahAccess Wireless Gateway's LAN ports can pass files to the printer. The pin assignments used to connect to the printer port are provided in the following table.

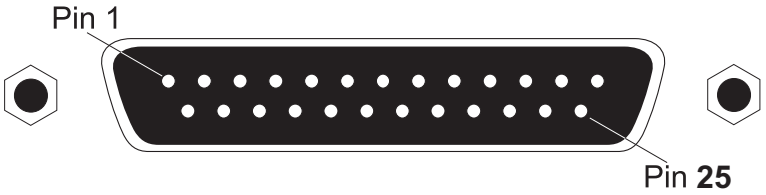

Figure B-3. DB-25 Printer Port Pin Numbers

DB-25 Printer Port Pin Assignments

Pin	Signal Name	Direction
1	-Strobe	To printer
2	+Data 0	To printer
3	+Data 1	To printer
4	+Data 2	To printer
5	+Data 3	To printer
6	+Data 4	To printer
7	+Data 5	To printer
8	+Data 6	To printer
9	+Data 7	To printer
10	- ACK	To print server
11	+ Busy	To print server
12	+ Paper End	To print server
13	+ Select	To print server
14	- Auto Feed	No connection
15	- Error	To print server
16	- Init	To printer
17	- Select	No connection
18-25	GND	Ground

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Appendix C: Specifications

WAN Interface

10BASE-T, 1 RJ-45 port
Serial, 1 RS-232 DB-9 connector

LAN Interface

10BASE-T/100BASE-TX
3 RJ-45 ports

WLAN Interface

Standard: IEEE 802.11b, Direct Sequence Spread Spectrum (DSSS)
Transmission Rate: 11 Mbps, automatic fallback to 5.5, 2 or 1 Mbps
Maximum Channels: US/Canada: 11, Europe (ETSI): 13
Range: Up to 1000 ft (304.8 m)
Frequency: (US/Canada/Europe) 2.400-2.4835 GHz
Sensitivity: 1, 2, 5.5 Mbps: -80 dBm; 11 Mbps: -76 dBm typical
Modulation: CCK, BPSK, QPSK
Encryption: 64-bit/128-bit WEP
Maximum Clients: 128

Printer Interface

Parallel
1 DB-25 printer port

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Management

Web management

Advanced Features

Dynamic IP Address Configuration – DHCP, DNS
Firewall – Client privileges, hacker prevention and logging, NAT
Virtual Private Network – PPTP, L2TP, IPSec pass-through
Backup Internet Connection –
Dial-on-demand via secondary WAN port
Print server

Internet Standards

ARP (RFC 826), IP (RFC 791), ICMP (RFC 792), UDP (RFC 768), TCP (RFC 793), Telnet (RFC 854-859), MD5 (RFC 1321), BOOTP Extension (RFC 1497), PPP LCP Extension (RFC 1570), PPPoE (RFC 2516), NAT (RFC 1631), PPP (RFC 1661), HTML (RFC 1866), HTTP (RFC 1945), CHAP (RFC 1944), DHCP (RFC 2131), PPTP (RFC 2637)

Indicator Panel

WAN, WLAN, LAN (Link, Activity), Power

Dimensions

21.91 x 13.34 x 2.54 cm (8.625 x 5.25 x 1 in.)

Weight

0.68 kg (1.5 lbs)

Input Power

5 V DC (2.0 A)

Maximum Current

0.40A RMS max.@110 V, 0.87 A RMS max.@240 V

Power Consumption

10 Watts max. @ 100-240 VAC

Heat Dissipation

34.1 BTU/hr max. @ 100-240 VAC

Temperature

Operating 32 to 104 °F (0 to 40 °C)
Storage -40 to 158 °F (-40 to 70 °C)

Humidity

5% to 95% (noncondensing)

Compliances

CE Mark
Emissions
FCC Class B
VCCI Class B
Industry Canada Class B
EN55022 (CISPR 22) Class B

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C-Tick - AS/NZS 3548 (1995) Class B
ETS 300 328
MPT RCR STD-33
EN 61000-3-2/3

Immunity

EN 61000-4-2/3/4/5/6/8/11

Safety

UL 1950
EN60950 (TÜV)
CSA 22.2 No. 950

Warranty

Limited Lifetime

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Appendix D: Ordering Information

CheetahAccess™ Internet Gateway Products	
AC-IG1004	4-port Internet Gateway - WAN/LAN/Print Server
AC-IG1008	8-port Internet Gateway - WAN/LAN/Print Server
AC-IG2004W	4-port Wireless Gateway - WAN/LAN/WLAN/Print Server

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AC-IG2004W
E102001-R01
Part Number: 650.10511

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